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MEDICAL SURVEILLANCE
PROCEDURES MANUAL
AND
MEDICAL MATRIX
(EDITION 9)

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A handwritten signature in black ink, appearing to read 'W. R. Stover', written over a horizontal line.

CAPTAIN W. R. STOVER, MSC, USN
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FORWARD

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Chapter 1:

C1. Medical Screening

A medical screening examination as part of a medical surveillance program is one of several tools aimed at protecting workers who are exposed or potentially exposed to hazardous substances in the workplace.

A medical surveillance program includes establishing exam content, performing occupational medical examinations, documenting results of examinations, informing the employee of the results of examination, following up abnormalities, counseling and education, and evaluating grouped data for trends and sub-clinical effects of exposure.

Selection of personnel for medical surveillance programs is based primarily on the results of the industrial hygiene survey and is exposure driven. This is known as "hazard based" medical surveillance. In the absence of industrial hygiene data, medical personnel will make a decision on placement in medical surveillance programs based on knowledge of the workplace processes, job requirements, and occupational history.

Exam content is established in the Medical Matrix for performing hazard based medical examinations and certification examinations. This document establishes the minimum requirements for medical surveillance and certification examinations ([OPNAVINST 5100.23 series](#)).

Special attention in performing occupational medical examinations is given to those target organs or organ systems potentially subject to the untoward effects of hazardous substances whether by inhalation, absorption or ingestion. Elements of examination include specific history questions (personal and family medical history, and work history), physical examination, x-ray, biological monitoring (testing of body fluids or tissues for the toxic substance itself, a metabolite or a physiologic change), and other laboratory and ancillary tests such as EKG, PFT and audiogram. Conducting occupational medical examinations to detect early organ dysfunction or early disease to benefit individual workers is "screening" or "monitoring" and constitutes secondary prevention.

An integral component of the occupational medical examination is follow-up. Follow-up may include notification, additional tests or evaluation, evaluation or modification of the workplace or removal from exposure. Workers who receive occupational medical examinations should be informed of any specific health risks identified on examination. Certain OSHA programs require written notification in the form of Physician's/provider's Written Opinions. Examples are included in [C11.2, Physician's/Provider's Written Opinion Samples](#).

C1.1. Types of Occupational Medical Examinations

Most medical surveillance programs consist of examinations for baseline (preplacement), periodic and termination. If there is evidence of overexposure, a situational examination will be required. Guidelines for situational examinations are not included in the Medical Matrix.

C1.1.1. Baseline Examination (Preplacement or Pre-Assignment)

This examination is performed before the employee starts work in a position with a potential for hazardous exposure and provides information necessary to determine suitability of the employee for the job. It also provides a baseline against which changes can be compared.

C1.1.2. Periodic Examination

This examination is performed during the time that a worker is employed in a job with a potential for exposure to hazardous substances. The frequency and extent of periodic

examinations vary, depending on the program. With certain stressors, the frequency of examinations will also depend on other variables, such as the findings from previous examinations, the history of exposure or the age of the worker.

C1.1.3. Termination Examination

This examination may be required when the worker terminates employment or is permanently removed from a position that has a potential for exposure to a hazardous substance. Documentation of the worker's state of health at the termination of employment or exposure is essential for comparison purposes if the worker later develops medical problems that could be attributed to past occupational exposures. In some cases, this examination is not required if a periodic examination has been documented within the past twelve months. Specific program references provide guidelines.

C1.1.4. Situational Examination

This examination is conducted in response to a specific incident for which a possible overexposure to a hazardous substance is suspected. Such an incident should prompt these examinations on all individuals with suspected overexposure, not just those already in a surveillance program. These examinations may vary significantly from routine medical surveillance protocols. Guidelines for performing situational examinations are not provided in this manual. The purpose of this manual is to provide guidance for performing routine medical surveillance.

C1.2. Content of Medical Examinations

A list of history questions, physical examination components, and laboratory tests was developed as a reference file and was used to construct the content of each program in the Medical Matrix. Each item in the reference file is called a "test". The tests are divided into similar categories such as Medical History, Cardiology, Spirometry, etc., and numbered in sequence. All tests used in construction of the Matrix are displayed in [C8, Listing of Tests](#). Below is an outline of the major categories of tests and the corresponding numbers in the reference file.

Medical History	Test Numbers
Personal History of:	1100 – 1999
Work History of:	2000 - 2099
Family History of:	2500 - 2599
Laboratory	
Hematology	3100 - 3199
Serum Chemistry	3500 - 3699
Urinalysis	4000 - 4299
Cytology	4500 - 4599
Other Laboratory Tests	4800 - 4899
Cardiology	5000 - 5099
Audiology	5200 - 5299
Radiology	5400 - 5499
Spirometry	5600 - 5699
Optometry	5800 - 5899
Physical Exam	6010 - 6999

Qualifications	7100 – 7199
Certifications	7500 - 7799
Hearing Conservation	8000 - 8199
Special Notations	9010 - 9099

C1.3. Twelve Standard Questions

There are twelve (12) standard questions included in each Medical Matrix program designed to help assess public health and safety risk factors for each worker. These questions were written for inclusion in data collection protocol when developed. The standard twelve questions are:

1. Is Your Work Exposure History Current (OPNAV 5100/15)
2. Major Illness or Injury
3. Hospitalization or Surgery
4. Cancer
5. Back Injury
6. Do you drink 6 or more drinks per week?
7. Have you ever smoked?
8. Do you currently smoke? (__Packs/day)
9. Heart Disease, High Blood Pressure or Stroke
10. Current Medication Use (Prescription or Over-The-Counter)
11. Allergies (Include Medications)
12. Any reproductive health concerns?

C1.4. References

1. Halperin W, Ratcliffe J, Frazier T, et al. Medical Screening in the workplace: proposed principles, *J Occup Med.* 1986; 28:547-552.
2. Matte T, Fine L, Meinhardt T, et al. Guidelines for medical screening in the workplace, *Occup Med.: State of the Art Reviews.* 1990; 5:439-456.
3. Silverstein M. Medical Screening, Surveillance, and the Prevention of Occupational Disease. *J Occup Med.* 1990;32:1032-1036.
4. Baker E, Honchar, P, Fine, L, et al. Surveillance in Occupational Illness and Injury: Concepts and Content, *Am J. of Public Health.* 1989;79:9-11.
5. Sorgdrager B, Hulshof CT, van Dijk FJ. Evaluation of the effectiveness of pre-employment screening. *Int Arch Occup Environ Health.* 2004 May; 77(4):271-6.
6. Ekebrecht T. Occupational standards for the protection of employees in biotechnology. *Int Arch Occup Environ Health.* 2000 Jun; 73 Suppl:S4-7.
7. Rawbone RG. Future impact of genetic screening in occupational and environmental medicine. *Occup Environ Med.* 1999 Nov; 56(11):721-4.

Chapter 2:

C2. Placement of Workers in Medical Surveillance Programs

C2.1. Hazard Based Medical Surveillance

Workers with potential exposure to hazards are usually placed in medical surveillance programs based on industrial hygiene (IH) and/or safety surveys that quantify exposures in the workplace. This has been called "hazard based" medical surveillance. Workplace hazard assessment takes into account exposure levels (frequency and duration), and routes of exposure (inhalation, skin absorption or ingestion), and similarly exposed groups.

The decision to include a worker in a program is normally based on the possibility of exposure at or above the action level set by U.S. Navy standards that must comply with Occupational Safety and Health Administration (OSHA) standards. If insufficient data or no data are available, medical personnel may place workers in medical surveillance based on "presumed" exposures and job title. When this happens, workers medical surveillance needs must be reassessed as IH data are obtained.

Workers whose jobs are associated with exposures to hazards at or above the medical surveillance action level for more than 30 days per year or 15 days per quarter are placed into medical surveillance programs. When there is no legal standard for medical examinations for specific agents, or when there are insufficient data to demonstrate compliance with a high degree of confidence, half of a recommended exposure limit, (i.e., Threshold Limit Value), may be used as the action level. Some programs have specific guidance for placement: asbestos, organophosphate pesticide workers, hearing conservation, and radiation workers.

Chapter 3:

C3. How to Use the Medical Matrix

C3.1. History of Development of the Medical Matrix

The Medical Matrix Validation Committee was formed in March 1988. Its tasking was to review an existing Medical Matrix and design a program that would define hazard based medical surveillance. The goal of the Committee was to develop standard examination protocols for medical surveillance programs that could be presented in a useable format. The original Matrix was published as a Navy Environmental Health Center (NAVENVIRHLTHCEN) Technical Manual in January 1989.

The Medical Matrix Committee continues to review existing programs, evaluate the need for, and write new programs for those stressors that have chronic health effects. See [C9, Reviews and Revisions](#) for a list of those stressors reviewed and for which no evidence of chronic health effects could be found. This list will be reviewed periodically and amended as new information indicates.

Situations may arise where industrial hygiene data indicate potential overexposure to a stressor, but there is no corresponding matrix program for that stressor. An occupational medicine specialist may substitute a closely related matrix program after review of the toxicity of the stressor. Any appropriate modifications can be hand written on the forms generated. Request for review of a new program should be sent to the Matrix Committee (see [C11.1, Suggested or Requested Changes in the Medical Matrix](#)).

C3.2. Explanation of Contents

The Medical Matrix, Edition 9, contains medical surveillance and certification examinations divided into four major sections with each section preceded by a brief introduction.

Each program is organized in the same format:

First, medical history questions; personal, work and family.

Second, recommended laboratory or ancillary (EKG, PFT, audiogram) tests.

Third, areas which should be targeted on physical examination; Central Nervous System (CNS), respiratory system, liver, for example.

Last, special requirements such as qualification and certification are listed, followed by special notations such as warnings, assessment of knowledge and requirement for Physician's/provider's Written Opinion.

Each section ends with a line prompting for comments on that section, if indicated.

Following each program is a Program Description section that includes:

General references are included as numbers that correspond to the reference list found in [C10, General References](#). These general texts were used in developing each program and are additional resources. Specific references such as Navy instructions, OSHA Standards, Department of Defense, Office of Civilian Personnel Management or Civilian Personnel Instructions are listed in the program description.

NOTE: References listed were current at the time of publication. However, individual users are cautioned of their responsibility to ensure use of the most current edition or version.

Detailed guidance and interpretation may be included to further explain the program.

Date of most recent revision.

Web sites when available.

The Provider Comments section may contain more detailed information about the program including guidance about the examination, how to interpret test results, and what to do with test results that are outside the range of normal.

C3.3. Four Divisions of the Matrix

[Chemical Stressors](#)

[Physical Stressors](#)

[Mixed Exposures](#)

[Specialty Examinations](#)

Chapter 4:

C4. Chemical Stressors

C4.1. Introduction and Changes

C4.1.1. Revisions:

Program 115 – Asbestos Past Worker 10+ years since first Exposure

Program 116 – Asbestos Past Worker 0 – 10 years since first Exposure

Changes were made to these two programs based on feedback from users. Because the medical examination is documented on required form NAVMED 6260/5, history, physical, and laboratory tests were removed from the Matrix and program descriptions were expanded to describe program elements. This will result in shorter printout if you use PC Matrix for these two programs. When you select this program in PC Matrix, the program name, type of examination, and special notations will print out or will be added to the list of programs you select for a worker.

Construction standard references were added to each OSHA required program.

2-ACETYLAMINOFLUORENE**102**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
2-acetylaminofluorene	AB9450000	53-96-3		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Family history of:				
Genetic disease (include children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				
Immunocompetence (lymphatic system)	Yes	Annual	Yes	
Other appropriate examination (specify)	Yes	Annual	Yes	
Comments on physical examination:	Yes	Annual	Yes	
Special notations:				
Substance(s) suspected human carcinogen	Yes	Annual	Yes	
Substance(s) suspected human mutagenic/fetotoxic effects	Yes	Annual	Yes	
Physician's written opinion required	Yes	Annual	Yes	
Is surveillance/PPE consistent with exposures?	Yes	Annual	Yes	
Are any abnormalities related to exposures/occupations?	Yes	Annual	Yes	

PROGRAM DESCRIPTION:

This compound was being developed as a pesticide until carcinogenic activity was discovered.

In recent years, it has been used only in laboratories as a model of tumorigenic activity in animals. The use of this substance would be rare and current exposure risk is low at present.

REFERENCES:

1. 29 CFR 1910.1003
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10007&p_text_version=FALSE)
2. 1926.1103 (former standard 19 CFR 1910.1014.)
3. OSHA Standard [29 CFR 1910.1003](#) and 29 CFR 1926.1103

REVISED: JAN 2006, Henry Queen, RN

ACRYLAMIDE**103**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
acrylamide	AS3325000	79-06-1		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Weight loss	Yes	Annual	Yes	
Neur disorder, gait change, paresthesia, coord loss	Yes	Annual	Yes	
Family history of:				
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				
Central nervous system	Yes	Annual	Yes	
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes	
Other appropriate examination (specify)	Yes	Annual	Yes	
Comments on physical examination:	Yes	Annual	Yes	
Special notations:				
Substance(s) suspected human carcinogen	Yes	Annual	Yes	
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes	
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes	

PROGRAM DESCRIPTION:**REFERENCES:**

<http://www.cdc.gov/niosh/npg/npgd0012.html>

[NIOSH Criteria for a Written Standard...Occupational Exposure to Acrylamide DHHS Pub No. 77-112 \(http://www.cdc.gov/niosh/77-112.html\)](http://www.cdc.gov/niosh/77-112.html).

[NIOSH Criteria Documents: acrylamide DHHS Pub No. 91-115 \(http://www.cdc.gov/niosh/91-115.html\).](http://www.cdc.gov/niosh/91-115.html)

REVISED: JAN 2006, Henry Queen, RN

ACRYLONITRILE (VINYL CYANIDE)**104**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
acrylonitrile	AT5250000	07-13-1	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Headache, dizziness, light-headedness, weakness			
Chest pain, angina, heart attack	Yes	Annual	Yes
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Pneumonia	Yes	Annual	Yes
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Problems with balance and coordination	Yes	Annual	Yes
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes
Thyroid disease (heat or cold intolerance)	Yes	Annual	Yes
Depression, diff concentrating, excessive anxiety	Yes	Annual	Yes
Personality change	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), total bilirubin, alk phos.	Yes	No	Yes
SGOT (AST)	*	Annual	Yes
Additional lab tests:			
Stool hemocult (over age 40)	Yes	Annual	Yes
Radiology:			
Chest x-ray (PA)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Abdomen	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Thyroid	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures?	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations?	Yes	Annual	Yes

* SGOT for baseline is included in baseline liver profile. Only SGOT is required as annual test.

PROGRAM DESCRIPTION:

REFERENCES:

1. OSHA Standard [29 CFR 1910.1045](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10065)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10065)
2. 29 CFR 1926.1145

REVISED: JAN 2006, Henry Queen, RN

ALLYL CHLORIDE**105**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
allyl chloride	UC7350000	107-05-1		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: Have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Skin disease	Yes	Annual	No	
Hepatitis or jaundice	Yes	Annual	No	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No	
Change or loss of vision	Yes	Annual	No	
Eye irritation	Yes	Annual	No	
Liver disease	Yes	Annual	No	
Kidney disease	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Serum chemistry:				
Liver profile to include:				
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Annual	No	
BUN and creatinine	Yes	Annual	No	
Urinalysis:				
Routine Urinalysis with microscopic	Yes	Annual	No	
Radiology:				
Chest x-ray (PA)	Yes	No		
Spirometry:				
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No	
Comments on laboratory results:	Yes	Annual	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				

EXAM ELEMENT	BASE	PERI	TERM
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES: [NIOSH Criteria For a Recommended Standard. Occupational Exposure to Allyl Chloride DHHS Pub No. 76-204](http://www.cdc.gov/niosh/76-204.html) (<http://www.cdc.gov/niosh/76-204.html>).

REVISED: JAN 2006, Henry Queen, RN

4-AMINODIPHENYL**106**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
4-aminodiphenyl	DU8925000	92-67-1		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
decreased immunity				
Problems with urination/blood in urine	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Family history of:				
Genetic disease (include children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				
Immunocompetence (lymphatic system)	Yes	Annual	Yes	
Other appropriate examination (specify)	Yes	Annual	Yes	
Comments on physical examination:	Yes	Annual	Yes	
Special notations:				
Substance(s) known human carcinogen	Yes	Annual	Yes	
Physician's/provider's written opinion required	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

OSHA STANDARD [29 CFR 1910.1003](#) and 29 CFR 1926.1103

REFERENCES:

1. [29 CFR 1910.1003](#)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10007).
2. Former standard 29 CFR 1910.1011 and 1910.1103.

REVIEWED: JAN 2006, Henry Queen, RN

ANTIMONY**109**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
antimony	CC4025000	7440-36-0	
antimony trioxide (handling & use)	CC5650000	1309-64-4	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week? (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Eye irritation	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	Yes
Work history of:			
Exposure to skin irritants	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Cardiology:			
Electrocardiogram	Yes	Annual	Yes
Radiology:			
Chest x-ray (PA)	Yes	Annual	Yes
Spirometry:	Yes	Annual	Yes
Comments on laboratory results:			
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			

EXAM ELEMENT	BASE	PERI	TERM
Cardiovascular system	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Mucous membranes	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

1/06 - Based on NIOSH criteria document, baseline spirometry, annual CXR, EKG and spirometry added.

REFERENCES:

NIOSH Criteria document <http://www.cdc.gov/niosh/npg/npgd0036.html>.

REVIEWED: JAN 2006, Dr. Jeffrey Derr

ARSENIC ANY EXPOSURE (UNDER 45 YRS WITH LESS THAN 10 YRS EXPOSURE OVER THE ACTION LEVEL) 112

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
calcium arsenate	CG0830000	7778-44-1
arsenic acid, lead (2+) salt (2:3)	CG0990000	3687-31-8
arsenic (inorganic & soluble compounds)	CG0525000	7440-38-2
Program Frequency		Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Coughing up blood (hemoptysis)	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes
Work history of:			
10 or more yrs since first exposure to arsenic	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Radiology:			
Chest x-ray (PA)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			

EXAM ELEMENT	BASE	PERI	TERM
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Nasal mucosa (septal perforation)	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures listed on OPNAV 5100/15?	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

Reference (1) requires International Labor Office UICC/Cincinnati (ILO U/C) rating of chest x-ray. This can be arranged through the local Radiology Department.

1/06 – Sputum Cytology requirement removed.

When a specified examination has not been provided within six months preceding termination of employment, an examination must be provided upon termination of employment.

REFERENCE:

1. [29 CFR 1910.1018](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10023)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10023);
2. 29 CFR 1926.1118
3. [29 CFR 1910.134, Respiratory Protection](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARDS&p_id=12716)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARDS&p_id=12716) (Respirator program generally required for arsenic workers);
4. Klaassen CD, Casarett & Doull's Toxicology: The Basic Science of Poisons 6th edition, McGraw-Hill 2001: 818-820;
5. HAZ-MAP at National Library of Medicine http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=1147
6. Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profile <http://www.atsdr.cdc.gov/toxprofiles/tp2.html>

REVIEWED: JAN 2006, Dr. Jeffrey Derr

ARSENIC (EMPLOYEES NOT COVERED BY “ARSENIC ANY EXPOSURE”) 111

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
calcium arsenate	CG0830000	7778-44-1
arsenic acid, lead (2+) salt (2:3)	CG0990000	3687-31-8
arsenic (inorganic & soluble compounds)	CG0525000	7440-38-2
Program Frequencies		SEMI Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Semi-A	Yes
Major illness or injury	Yes	Semi-A	Yes
Hospitalization or surgery	Yes	Semi-A	Yes
Cancer	Yes	Semi-A	Yes
Back injury	Yes	Semi-A	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Semi-A	Yes
Have you ever smoked	Yes	Semi-A	Yes
Do you currently smoke	Yes	Semi-A	Yes
Heart disease, high blood pressure, or stroke	Yes	Semi-A	Yes
Current medication use (prescription or OTC)	Yes	Semi-A	Yes
Medication allergies	Yes	Semi-A	Yes
Any reproductive health concerns	Yes	Semi-A	Yes
Allergies (asthma, hay fever, eczema)	Yes	Semi-A	Yes
Skin disease	Yes	Semi-A	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Semi-A	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Semi-A	Yes
Coughing up blood (hemoptysis)	Yes	Semi-A	Yes
Shortness of breath	Yes	Semi-A	Yes
Cough (dry or productive)	Yes	Semi-A	Yes
Problems with numbness, tingling, weakness in hands or feet	Yes	Semi-A	Yes
Work history of:			
10 or more yrs since first exposure to arsenic	Yes	Semi-A	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Semi-A	Yes
Comments on medical history:	Yes	Semi-A	Yes
Radiology:			
Chest x-ray (PA)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Semi-A	Yes
Physical examination:			
Vital signs	Yes	Semi-A	Yes
Special attention in examination to:			
Peripheral nervous system (strength, sensation, DTR)	Yes	Semi-A	Yes

EXAM ELEMENT	BASE	PERI	TERM
Cardiovascular system	Yes	Semi-A	Yes
Liver	Yes	Semi-A	Yes
Nasal mucosa (septal perforation)	Yes	Semi-A	Yes
Respiratory system	Yes	Semi-A	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Semi-A	Yes
Other appropriate examination (specify)	Yes	Semi-A	Yes
Comments on physical examination:	Yes	Semi-A	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Semi-A	Yes
Physician's/provider's written opinion required	Yes	Semi-A	Yes
Is surveillance/PPE consistent with exposures	Yes	Semi-A	Yes
Are any abnormalities related to exposures/occupations	Yes	Semi-A	Yes
Recommendations:	Yes	Semi-A	Yes

PROGRAM DESCRIPTION:

When a specified examination has not been provided within six months preceding termination of employment, an examination must be provided upon termination of employment.

PROVIDER COMMENTS:

Reference (1) requires International Labor Office UICC/Cincinnati (ILO U/C) rating of chest x-ray. This should be arranged through local Radiology Department.

1/06 – Sputum Cytology requirement removed, CXR requirement changed to annual.

REFERENCE:

1. 29 CFR 1910.1018
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10023);
2. 29 CFR 1926.1118
3. 29 CFR 1910.134, Respiratory Protection
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=12716) (Respirator program generally required for arsenic workers);
4. Klaassen CD, Casarett & Doull's Toxicology: The Basic Science of Poisons 6th edition, McGraw-Hill.
5. HAZ-MAP at National Library of Medicine http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=1147
6. Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profile
<http://www.atsdr.cdc.gov/toxprofiles/tp2.html>

REVIEWED: JAN 2006, Dr. Jeffrey Derr

ASBESTOS CURRENT WORKER

113

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
asbestos	CI6475000	1332-21-4
chrysotile	CI6478500	12001-29-5
amosite	CI6477000	12172-73-5
anthophyllite	CA8430000	17068-78-9
crocidolite	CI6479000	12001-28-4
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	Yes
Change in frequency or appearance of bowel movements	Yes	Annual	Yes
Any finding related to asbestos exposure?	Yes	Annual	Yes
Laboratory:			
Radiology			
Chest x-ray (asbestos) using navmed 6260/7 (Circle correct frequency)	Yes	Circle:	Yes
Age of employee:	15 to 35	35 to 45	45+
Years since first exposure:			
0 to 10	5 years	5 years	5 years
10+	5 years	2 years	1 year
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes
Qualifications:			
Respiratory protection	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Counseling regarding the combined effects of	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
smoking and asbestos exposure			
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures listed on OPNAV 5100/15?	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

Examination is required within 30 calendar days before or after termination of employment, if not examined within the last year.

PROVIDER COMMENTS:

Examination results are recorded on NAVMED 6260/5, REV (5/90), Periodic Health Evaluation. Workers examined for current exposure must complete DD 2493-1, Initial Examination, or DD 2493-2, Periodic Examination questionnaires.

OSHA standard requires a Physician's/provider's Written Opinion. A sample is included in [C11.2, Physician's/Provider's Written Opinion Samples](#). Amendment to the Standard (55FR 3724) requires that the employee be counseled regarding the increased risk of lung cancer attributable to the combined effects of smoking and asbestos exposure and that this is part of the Physician's/provider's Written Opinion.

1/06 – Gastrointestinal medical history questions added per OSHA standard Appendix H.

REFERENCES:

1. [29 CFR 1910.1001](#)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=9995);
2. 29 1926.1101
3. [OPNAVINST 5100.23G, Chapter 17](#)
(<http://www.safetycenter.navy.mil/instructions/osh/510023/default.htm>);
4. [OPNAVINST 5100.19D, Chapter B1](#)
(<http://www.safetycenter.navy.mil/instructions/afloat/510019D.htm>).

REVIEWED: JAN 2006, Dr. Jeffrey Derr

ASBESTOS PAST WORKER - 0 TO 10 YEARS SINCE FIRST EXPOSURE 116

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
asbestos	CI6475000	1332-21-4
chrysotile	CI6478500	12001-29-5
amosite	CI6477000	12172-73-5
anthophyllite	CA8430000	17068-78-9
crocidolite	CI6479000	12001-28-4
	Program Frequency	Penta-ennial

EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Penta-e	
Special notations:			
Substance(s) known human carcinogen	Yes	Penta-e	
Counseling regarding the combined effects of smoking and asbestos exposure	Yes	Penta-e	
Is surveillance/PPE consistent with exposures listed on OPNAV 5100/15?	Yes	Penta-e	
Are any abnormalities related to exposures/occupations	Yes	Penta-e	
Recommendations:	Yes	Penta-e	

PROGRAM DESCRIPTION:

Military and civilian personnel who have a history of asbestos exposure during past federal employment or military service may be included in the Asbestos Medical Surveillance Program (AMSP), upon request, if any of the following criteria are met.

History of enrollment in the Navy AMSP.

History of participation in any operation where visible airborne asbestos dust was present, including but not limited to rip-outs, for approximately 30 days or more in the past.

The occupational health provider, with occupational medicine physician consultation, concludes that the individual had exposure to asbestos that meets the current OSHA criteria for placement in the medical surveillance program, or its equivalent, for approximately 30 days or more in the past.

An employee who is in the AMSP based on a history of past exposure may be removed from the AMSP upon request. An entry in the medical record on the SF 600 should document the rationale for removing the individual from the AMSP. In Addition, notify NAVENVIRHLTHCEN in writing the name and SSN of any individual incorrectly placed in the AMSP when that person is removed from the program.

While not required, a termination evaluation may be recommended in certain cases, such as those with a history of heavy exposure or when there has been a long interim since the last evaluation.

PROVIDER COMMENTS:

Amendment (55 FR 3724) to the OSHA Standard (29 CFR 1910.1001) requires that the employee be counseled regarding the increased risk of lung cancer attributable to the combined effects of smoking and asbestos exposure.

Spirometry (FEV1, FVC, FEV1/FVC %) and chest x-ray with B Reader interpretation are performed with each examination. The examination is documented on NAVMED 6260/5, Rev (5/90), Periodic Health Evaluation. A Physician's Written Opinion is not required to be given to workers for past exposure examination. The DD Form 2493-1 and DD Form 2493-2 are not required for past exposure examinations.

Although this program is used for formerly exposed workers (the OSHA standard applies to currently exposed workers), this risk communication on the multiplicative risk of continued smoking and former asbestos exposure should be discussed with the employee at each asbestos medical surveillance visit.

REFERENCES:

1. [OPNAVINST 5100.23](#) (current series), Chapter 17;
2. [OPNAVINST 5100.19](#) (current series), Chapter B1;
3. [Occupational Medicine Field Operations Manual, current edition](http://www-nehc.med.navy.mil/od/Documents/OEM_FOM_Aug2006.pdf) (http://www-nehc.med.navy.mil/od/Documents/OEM_FOM_Aug2006.pdf).

REVISED: MAY 2006, Dr. Jeffrey Derr

ASBESTOS PAST WORKER 10+ YEARS SINCE FIRST EXPOSURE

115

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
Asbestos	CI6475000	1332-21-4
Chrysotile	CI6478500	12001-29-5
Amosite	CI6477000	12172-73-5
Anthophyllite	CA8430000	17068-78-9
Crocidolite	CI6479000	12001-28-4
Program Frequency		Age dependent

EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had: Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	YES	***	
Is surveillance/PPE consistent with exposures	YES	***	
Are any abnormalities related to exposures/occupations?	YES	***	
Recommendations:	YES	***	

*****FREQUENCY OF EXAMINATION**

AGE	FREQUENCY
15 To 34	Penta-Ennial
35 To 44	Biennial
45+	ANNUAL

PROGRAM DESCRIPTION:

Military and civilian personnel who have a history of asbestos exposure during past Federal employment or military service may be included in the Asbestos Medical Surveillance Program (AMSP), upon request, if any of the following criteria are met.

History of enrollment in the Navy AMSP.

A history of participation in any operation where visible airborne asbestos dust was present, including but not limited to rip-outs, for approximately 30 days or more in the past.

The occupational health provider, with occupational medicine physician consultation, concludes that the individual had exposure to asbestos that meets the current OSHA criteria for placement in the medical surveillance program, or its equivalent, for approximately 30 days or more in the past.

An employee who is in the AMSP based on a history of past exposure may be removed from the AMSP upon request. An entry in the medical record on the SF 600 should document the rationale for removing the individual from the AMSP. In addition, notify NAVENVIRHLTHCEN in writing the name and SSN of any individual incorrectly placed in the AMSP when that person is removed from the program.

While not required, a termination evaluation may be recommended in certain cases, such as those with a history of heavy exposure or when there has been a long interim since the last evaluation.

PROVIDER COMMENTS:

Amendment (55 FR 3724) to the OSHA Standard (29 CFR 1910.1001) requires that the employee be counseled regarding the increased risk of lung cancer attributable to the combined effects of smoking and asbestos exposure.

Spirometry (FEV1, FVC, FEV1/FVC %) and chest x-ray with B Reader interpretation are performed with each examination. The examination is documented on NAVMED 6260/5, Rev (5/90), Periodic Health Evaluation. A Physician's Written Opinion is not required to be given to workers for past exposure examination. The DD Form 2493-1 and DD Form 2493-2 are not required for past exposure examinations.

Although this program is used for formerly exposed workers (the OSHA standard applies to currently exposed workers), this risk communication on the multiplicative risk of continued smoking and former asbestos exposure should be discussed with the employee at each asbestos medical surveillance visit.

REFERENCES:

1. [OPNAVINST 5100.23](#) (current series), Chapter 17;
2. [OPNAVINST 5100.19](#) (current series), Chapter B1;
3. [Occupational Medicine Field Operations Manual, current edition](#) (http://www-nehc.med.navy.mil/od/Documents/OEM_FOM_Aug2006.pdf).

REVIEWED: JAN 2006, Dr. Jeffrey Derr.

BENZENE

117

STRESSOR(S) IN THIS PROGRAM:		NIOSH #	CAS #	
benzene		CY1400000	71-43-2	
	Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: Have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Blood diseases (anemia)	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Bleeding abnormalities	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Work history of:				
Exposure to benzene	Yes	Annual	Yes	
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes	
Exposure to ionizing radiation	Yes	Annual	Yes	
Exposure to carcinogens	Yes	Annual	Yes	
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	Yes	
Family history of:				
Blood diseases (anemia)	Yes	Annual	Yes	
Genetic disease (include children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Hematology:				
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes	
Differential white blood cell count	Yes	Annual	Yes	
Platelet count	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Peripheral nervous system	Yes	Annual	Yes
Abdomen	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

Guidance on emergency examinations, mandatory referrals to a hematologist or internist by the examining physician, and mandatory removal are contained in 29 CFR 1910.1028. For all workers wearing respirators for at least 30 days a year, cardiopulmonary examination and spirometry are required on initial examination and every three years.

REFERENCE:

1. 29 CFR 1910.1028 and 1926.1128;
2. Goesline, BD, Biological and ambient monitoring of benzene in the workplace, Journal of Medicine, 1986, 28 (10):1051.

REVIEWED: MAR 2000

BENZIDINE**118**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
benzidine	DC9625000	92-87-5		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Decreased immunity	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Problems with urination/blood in urine	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Work history of:				
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes	
Exposure to carcinogens	Yes	Annual	Yes	
Family history of:				
Genetic disease (include children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	Yes	
Cytology:				
Urine cytology	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				

EXAM ELEMENT	BASE	PERI	TERM
Genitourinary tract	Yes	Annual	Yes
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCE:

1. OSHA STANDARD [29 CFR 1910.1003](#) and 29 CFR 1926.1103
2. Former standard 29 CFR 1910.1010.

PROGRAM REVIEWED 3/2000

BERYLLIUM

121

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
beryllium	DS1750000	7440-41-7
beryllium aluminum alloy	DS2200000	12770-50-2
beryllium chloride	DS2625000	7787-47-5
beryllium fluoride	DS2800000	7787-49-7
beryllium hydroxide	DS3150000	13321-32-7
beryllium oxide	DS4025000	1304-56-9

Program Frequency

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Coughing up blood (hemoptysis)	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Pneumonia	Yes	Annual	Yes
Work history of:			
Exposure to skin irritants	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	Annual	Yes
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

Use of the BeBLPT (Beryllium Blood Lymphocyte Proliferation Test) for medical screening is not recommended. The BeBLPT should be used only for diagnostic purposes in persons with clinical history and symptoms which may be consistent with Chronic Beryllium Disease (CBD) or as part of a well defined research project. Anyone performing a beryllium-specific test should notify the Navy Environmental Health Center, Occupational and Environmental Medicine Directorate.

On December 2004, OSHA filed a request for information to solicit input from concerned parties in an effort to create a new beryllium standard. This process is ongoing as of 11/05.

1. United States Army. Beryllium Surveillance and Medical Monitoring Policy (2002).
2. United States Navy. Response to OSHA's Occupational Exposure to Beryllium; Request for Information (2003).
3. American Conference of Governmental Industrial Hygienists. Biological Exposure Index Feasibility Assessment for Beryllium and Inorganic Compounds (2002).
4. Fed Register #: 67:70707-70712, November 26, 2002

REFERENCES:

PROGRAM REVIEWED - 11/05 CDR Ken Lankin.

BLOOD AND/OR BODY FLUIDS**178**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
blood and/or body fluids		Baseline Only		
EXAM ELEMENT	Program Frequency	BASE	PERI	TERM
Medical history:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)		Yes		
Major illness or injury		Yes		
Hospitalization or surgery		Yes		
Cancer		Yes		
Back injury		Yes		
Do you drink 6 or more drinks per week (beer, wine, liquor)		Yes		
Have you ever smoked		Yes		
Do you currently smoke (packs/day)		Yes		
Heart disease, high blood pressure, or stroke		Yes		
Current medication use (prescription or OTC)		Yes		
Medication allergies		Yes		
Any reproductive health concerns		Yes		
Have you ever been evaluated for latex allergy		Yes		
Work history of:				
Exposure to potentially infectious body fluids		Yes		
Comments on medical history:		Yes		
Physical examination:				
Vital signs		Yes		
Other appropriate examination (specify)		Yes		
Comments on physical examination:		Yes		
Qualifications:				
Is hepatitis B vaccine series complete or prior infection documented?		Yes		
Special notations:				
Assess the examinee's knowledge of universal blood/body fluid precautions		Yes		
Physician's/provider's written opinion required		Yes		
Is surveillance/PPE consistent with exposures		Yes		
Are any abnormalities related to exposures/occupations		Yes		
Recommendations:		Yes		

PROGRAM DESCRIPTION:

This program does not have a periodic frequency. All tests are given at baseline physical exams and for any incident of exposure to potentially infectious materials. Exposure incident means a specific eye, mouth, other mucous membrane, non-intact skin or parenteral contact.

PROVIDER COMMENTS:

A sample Physician's/provider's written opinion can be found in [C11.2, Physician's/Provider's Written Opinion Samples](#).

Individuals entered in this program are those who have the potential for exposure to blood and/or body fluids.

Current national guidelines regarding the post-exposure management and reporting requirements for exposure incidents involving Hepatitis B or HIV are detailed in References 2 and 4. Guidelines regarding the use of Zidovudine post HIV exposure are in Reference 5. Occupational Health staff managing exposure incidents involving HIV should have reference 5 and 2 or 4 on hand as well as current recommendations issued by NEHC, the nearest NEPMU or the Infectious Disease Department at Navy MTF's.

Category II exposure includes persons performing tasks that involve no exposure to blood or body fluids or tissues, but whose employment may require performing unplanned Category I tasks. This category may include firefighters, police officers, ambulance and correctional workers. Hepatitis B vaccine is not generally recommended for these workers (Reference 6). Employees occupationally exposed on an average of one or more times per month to blood or other potentially infectious materials are recommended candidates for HBV series (reference 1).

The MMWR 7 Jun 96 details the chemoprophylaxis recommended to workers after occupational exposures associated with the highest risk for HIV transmission. Health care providers in the United States are encouraged to enroll workers who receive post-exposure prophylaxis (PEP) in the new HIV Post exposure Prophylaxis Registry, telephone (888) 737-4448 (888-737-4HIV). The data gathered will help shape future recommendations for managing occupational HIV exposures.

REFERENCES:

1. 29 CFR 1910.1030;
2. NIOSH Guidelines for prevention of transmission of human immunodeficiency virus and hepatitis B virus to health care and public safety workers, 1989, DHHS (NIOSH) Publication Number 89-107;
3. Lewy R. Organization and conduct of a hospital occupational health service, 1987, Occupational Medicine: State of the Art Reviews 2(3): 617-649.
4. MMWR Vol 38/S-6, Guidelines for prevention of transmission of human immunodeficiency virus and hepatitis B virus to health care and public-safety workers US Dept of HHS, Public Health Service, CDC, June 23 1989.
5. MMWR Vol 39/No.RR-1, Public Health Service Statement on Management of Occupational Exposure to Human Immunodeficiency Virus, Including Considerations Regarding Zidovudine Post exposure Use, US Dept of HHS, Public Health Service CDC, January 26, 1990.
6. Update: Provisional Public Health Service Recommendations for Chemoprophylaxis after Occupational Exposure to HIV. MMWR, 7 Jun 96.
7. OASD Policy. Hepatitis B Immunization Policy for Department of Defense Medical and Dental Policy. 23 Oct 96.

8. Hepatitis C Information for Health Care Workers. In: Hepatitis Surveillance, Report No. 56. Centers for Disease Control and Prevention. April 1996.

PROGRAM REVISED 3/2000

BORON TRIFLUORIDE**122**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
boron trifluoride	ED2275000	7637-07-2	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung or resp disease (COPD, bronchitis, pneumonitis)	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FEV1, FVC, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	No	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
PROGRAM REVISED 10/97

1,3-BUTADIENE**217**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
1,3-butadiene	EI9150000	106-99-0	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Blood diseases (anemia)	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Decreased immunity	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Work history of:			
Exposure to benzene	Yes	Annual	Yes
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes
Exposure to ionizing radiation	Yes	Annual	Yes
Exposure to carcinogens	Yes	Annual	Yes
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	Yes
Family history of:			
Blood diseases (anemia)	Yes	Annual	Yes
Genetic disease (include children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Decreased immunity	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Differential white blood cell count	Yes	Annual	Yes
Platelet count	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Trienn	Yes
Special attention in examination to:			
Abdomen	Yes	Trienn	Yes
Liver	Yes	Trienn	Yes
Spleen	Yes	Trienn	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Trienn	Yes
Immunocompetence (lymphatic system)	Yes	Trienn	Yes
Other appropriate examination (specify)	Yes	Trienn	Yes
Comments on physical examination:	Yes	Trienn	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

The following are the criteria for placement in this program:

Employees with exposure to butadiene at concentrations at or above the action level on 30 or more days;

Employees who have or may have exposure to butadiene at or above the PELs on 10 or more days a year;

Medical surveillance shall be continued for employees even after transfer to a job without butadiene exposure, whose work histories suggest exposure to butadiene:

At or above the PELs on 30 or more days a year for 10 or more years.

At or above the action level on 60 or more days a year for 10 or more years.

Above 10 ppm on 30 or more days in any past year. See 29 CFR 1910.1051, Appendix C, for health effect information and questionnaire sample.

Medical surveillance shall be instituted for employees exposed to butadiene following an emergency situation (defined as any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of butadiene). Guidance on emergency examinations and referrals is contained in 29 CFR 1910.1051.

See [C11.2, Physician's/Provider's Written Opinion Samples](#) for sample Physician's/provider's Written Opinion.

REFERENCES:

29 CFR 1910.1051.

REVIEWED: Feb 2006, Gail San Juan, NP

CADMIUM (CURRENT EXPOSURE)

124

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
cadmium (dust and salts)	EU9800000	7440-43-9
cadmium oxide	EV1925000	1306-19-0
cadmium sulfide	EV3150000	1306-23-6
cadmium sulfate (1 :)	EV2700000	10124-36-4
cadmium nitrate	EV1750000	10325-94-7
cadmium fluoborate	EV0525000	14486-19-2
cadmium chloride	EV0175000	10108-64-2
carbonic acid, cadmium salt	FF9320000	513-78-0

Program Frequency

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:	A	B	C
Personal history of:	A	B	C
Is your work exposure history current (OPNAV 5100/15)	A	B	C
Major illness or injury	A	B	C
Hospitalization or surgery	A	B	C
Cancer	A	B	C
Back injury	A	B	C
Do you drink 6 or more drinks per week (beer, wine, liquor)	A	B	C
Have you ever smoked	A	B	C
Do you currently smoke (packs/day)	A	B	C
How many years have or did you smoke?	A	B	C
None_____number of years_____	A	B	C
Greatest number of packs per day smoked. _____	A	B	C
Former smokers - time since quitting: _____years	A	B	C
Average packs per day smoked_____	A	B	C
Heart disease, high blood pressure, or stroke	A	B	C
Current medication use (prescription or OTC)	A	B	C
Medication allergies	A	B	C
Any reproductive health concerns	A	B	C
Blood diseases (anemia)	A	B	C
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	A	B	C
Treatment with steroids or cancer (cytotoxic) drugs	A	B	C
Chest pain, angina, heart attack	A	B	C
Repeated episodes of loss of or near loss of consciousness	A	B	C
Coughing up blood (hemoptysis)	A	B	C
Shortness of breath	A	B	C
Cough (dry or productive)	A	B	C
Liver disease	A	B	C
Kidney disease	A	B	C

EXAM ELEMENT	BASE	PERI	TERM
Kidney stones	A	B	C
Problems with urination/blood in urine	A	B	C
Protein in urine	A	B	C
Current pregnancy (self or spouse)	A	B	C
Impotence or sexual dysfunction	A	B	C
Bone problems (broken bones)	A	B	C
Musculoskeletal problems	A	B	C
Work history of:			
Exposure to cadmium (past, present & future)	A	B	C
Family history of:			
Cancers (leukemia, tumors)	A	B	C
Comments on medical history:	A	B	C
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	A	B	C
Serum chemistry:			
BUN and creatinine	A	B	C
Cadmium in blood (CdB)	A	D	C
Urinalysis:			
Routine:			
Urinalysis without microscopic	A	B	C
Urine chemistry:			
cadmium in urine (CDU)	A	D	C
Beta-2-microglobulin (β_2 -m) in urine	A	D	C
Radiology:			
Chest x-ray (PA)	A	E	C
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	A	B	C
Other tests deemed appropriate by the physician	A	B	C
Comments on laboratory results:	A	B	C
Physical examination:			
Vital signs	A	B	C
Special attention in examination to:			
Kidney	A	B	C
Respiratory system	A	B	C
Prostate palpation or other at-least-as-effective	A	B	C
Diagnostic test(s) for males over 40 years old			
Other appropriate examination (specify)	A	B	C
Comments on physical examination:	A	B	C
Special notations:			
Substance(s) suspected human carcinogen	A	B	C
Physician's/provider's written opinion required	A	B	C
Is surveillance/PPE consistent with exposures	A	B	C
Are any abnormalities related to exposures/occupations	A	B	C
Recommendations:	A	B	C

- A Initial (preplacement) examinations shall be provided for all personnel who meet the criteria for inclusion in the cadmium medical surveillance program within 30 days after initial assignment to the job with cadmium exposure. An initial examination is NOT required if records show that the employee has been examined in accordance with the standard within the past 12 months. In that case, the records shall be maintained as part of the employee's medical record, and the prior examination treated as if it were the initial examination.
- B After the initial exam and the subsequent exam one year later, the frequency of periodic medical examinations is to be at least biannually. It also may be triggered by the results of biological monitoring. Guidance on actions triggered by biological monitoring is detailed in 29 CFR 1910.1027 or NAVENVIRHLTHCEN letter referenced below.
- C At termination of employment, a medical examination shall be provided that includes the elements of the medical examination listed, including a chest x-ray. However, if the last examination was less than six months prior to the termination date and satisfied these requirements, further examination is not needed unless the results of biological monitoring require further testing.
- D Biological monitoring tests are provided either as part of a periodic medical examination or separately and are required to be performed at least annually. In addition, in accordance with **1910.1027(l)(1)(iv)**, the employer shall assure that the collecting and handling of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (B(2)-M) taken from employees under this section is done in a manner that assures their reliability and that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (B(2)-M) taken from employees under this section is performed in laboratories with demonstrated proficiency for that particular analyte. (See Appendix F of the CFR.)
- E After the initial chest X-ray, the frequency of chest x-rays is determined by the examining physician.

PROGRAM DESCRIPTION:

Currently exposed - all personnel who are or may be exposed to cadmium at or above the action level for 30 or more days per year.

Prior to assignment to a job requiring respirator use, a medical examination to determine fitness for respirator use shall be provided to any employee who does not have a medical examination within the preceding 12 months that satisfies the requirements outlined in 29 CFR 1910.1027. Place individuals on Program #716, Respirator User Certification Exam.

PROVIDER COMMENTS:

In accordance with 29 CFR **1910.1027(l)(1)(iii)**, the employer shall assure that **all medical examinations and procedures required by this standard are performed by or under the supervision of a licensed physician, who has read and is familiar with the health effects** section of Appendix A, the regulatory text of this section, the protocol for sample handling and laboratory selection in Appendix F, and the questionnaire of Appendix D. These examinations and procedures shall be provided without cost to the employee and at

a time and place that is reasonable and convenient to employees. The medical surveillance program consists of medical examinations and biological monitoring.

The Physician's/provider's Written Opinion is required by the OSHA Standard. A sample is included in [C11.2, Physician's/Provider's Written Opinion Samples](#).

REFERENCES:

OSHA STANDARD 29 CFR 1910, 1915, 1928, [29 CFR 1910.1027](#), [29 CFR 1926.1127](#)

1. 29 CFR 1910.1027 describes the medical removal program.
2. 29 CFR 1926.63;
3. NAVENVIRHLTHCEN letter 6260 Ser 3213/6538 of 4 Jan 1993.
4. [Occupational Exposures to Hazardous Agents, National Library of Medicine](#)

REVIEWED: Feb 2006, Gail San Juan, NP.

CADMIUM (PAST EXPOSURE)**206**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
cadmium (dust and salts)	EU9800000	7440-43-9
cadmium oxide (fume)	EV1930000	1306-19-0
cadmium oxide (production)	EV1925000	1306-19-0
cadmium sulfide	EV3150000	1306-23-6
cadmium sulfate	EV2700000	10124-36-4
cadmium nitrate	EV1750000	10325-94-7
cadmium fluoborate	EV0525000	14486-19-2
cadmium chloride	EV0175000	10108-64-2
cadmium carbonate	FF9320000	513-78-0
	Program Frequency	(See desc.)

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	F	G	H
Major illness or injury	F	G	H
Hospitalization or surgery	F	G	H
Cancer	F	G	H
Back injury	F	G	H
Do you drink 6 or more drinks per week (beer, wine, liquor)	F	G	H
Have you ever smoked	F	G	H
Do you currently smoke (packs/day)	F	G	H
How many years have or did you smoke?	F	G	H
None _____ number of years _____	F	G	H
Greatest number of packs per day smoked. _____	F	G	H
Former smokers - time since quitting: _____ years	F	G	H
Average packs per day smoked _____	F	G	H
Heart disease, high blood pressure, or stroke	F	G	H
Current medication use (prescription or OTC)	F	G	H
Medication allergies	F	G	H
Any reproductive health concerns	F	G	H
Blood diseases (anemia)	F	G	H
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	F	G	H
Treatment with steroids or cancer (cytotoxic) drugs	F	G	H
Chest pain, angina, heart attack	F	G	H
Repeated episodes of loss of or near loss of consciousness	F	G	H
Coughing up blood (hemoptysis)	F	G	H
Shortness of breath	F	G	H
Cough (dry or productive)	F	G	H
Liver disease	F	G	H

EXAM ELEMENT	BASE	PERI	TERM
Kidney disease	F	G	H
Kidney stones	F	G	H
Problems with urination/blood in urine	F	G	H
Protein in urine	F	G	H
Current pregnancy (self or spouse)	F	G	H
Impotence or sexual dysfunction	F	G	H
Bone problems (broken bones)	F	G	H
Musculoskeletal problems	F	F	H
Work history of:			
Exposure to cadmium	F	G	H
Family history of:			
Cancers (leukemia, tumors)	F	G	H
Comments on medical history:	F	G	H
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	F	G	H
Serum chemistry:			
BUN and creatinine	F	G	H
Cadmium in blood (cdb)	I	I	I
Urinalysis:			
Routine:			
Urinalysis without microscopic	F	G	H
Cadmium in urine (cdu)	I	I	I
Beta-2-microglobulin (β_2 -m) in urine	I	I	I
Radiology:			
Chest x-ray (PA)	F	G	H
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	F	G	H
Other tests deemed appropriate by the physician	F	G	H
Comments on laboratory results:	F	G	H
Physical examination:			
Vital signs	F	G	H
Special attention in examination to:			
Respiratory system	F	G	H
Prostate palpation or other at-least-as-effective	F	G	H
Diagnostic test(s) for males over 40 years old	F	G	H
Other appropriate examination (specify)	F	G	H
Comments on physical examination:	F	G	H
Special notations:			
Substance(s) suspected human carcinogen	F	G	H
Physician's/provider's written opinion required	F	G	H
Is surveillance/PPE consistent with exposures	F	G	H
Are any abnormalities related to exposures/occupations	F	G	H
Recommendations:	F	G	H

- F. Initial past exposure examinations shall be provided for all personnel who meet the criteria for inclusion in the cadmium past exposure medical surveillance program. An initial examination is NOT required if records show that the employee has been examined in accordance with the standard within the past 12 months (see **1910.1027(I)(2)(iii)**). In that case, the records shall be maintained as part of the employee's medical record, and the prior examination treated as if it were the initial examination for the purposes of paragraphs (I)(3) and (4) of this section.
- G. If the results of the initial biological monitoring tests show the employee's urine cadmium (CdU) level to be at or below 3 ug/g Cr, urine B(2)-M level to be at or below 300 ug/g Cr and blood cadmium (CdB) level to be at or below 5 ug/lwb, then in accordance with **1910.1027(I)(3)(i)(B)**, the employer shall provide biological monitoring for CdU, B(2)-M, and CdB one year after the initial biological monitoring and then the employer shall comply with the requirements of paragraph (I)(4)(v). For any levels in excess of the above numbers, consult with the CFR for specific follow up.
- H. In accordance with **1910.1027(I)(8)(i)**, at termination of employment, the employer shall provide a medical examination in accordance with paragraph (I)(4)(ii) of this section, including a chest X-ray, to any employee to whom at any prior time the employer was required to provide medical surveillance under paragraphs (I)(1)(i) or (I)(7) of this section. However, if the last examination satisfied the requirements of paragraph (I)(4)(ii) of this standard and was less than six months prior to the date of termination, no further examination is required unless otherwise specified in paragraphs (I)(3) or (I)(5). In addition, termination of employment examination is not required if previous biological monitoring results have returned to normal levels and periodic medical surveillance has been discontinued.
- I. In addition, in accordance with **1910.1027(I)(1)(iv)** the employer shall assure that the collecting and handling of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (B(2)-M) taken from employees under this section is done in a manner that assures their reliability and that analysis of biological samples of cadmium in urine (CdU), cadmium in blood (CdB), and beta-2 microglobulin in urine (B(2)-M) taken from employees under this section is performed in laboratories with demonstrated proficiency for that particular analyte. (See Appendix F of 29 CFR 1910.)

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

1. In accordance with 29 CFR **1910.1027(I)(1)(iii)**, the employer shall assure that all medical examinations and procedures required by this standard are performed by or under the supervision of a licensed physician, who has read and is familiar with the health effects section of Appendix A, the regulatory text of this section, the protocol for sample handling and laboratory selection in Appendix F, and the questionnaire of Appendix D. These examinations and procedures shall be provided without cost to the employee and at a time and place that is reasonable and convenient to employees.
2. OSHA requires a Physician's/provider's Written Opinion. A sample is included in [C11.2, Physician's/Provider's Written Opinion Samples](#).

Previously exposed - The employer shall institute a medical surveillance program for all employees who prior to the effective date of section **1910.1027(I)(1)(i)(B)** might previously have been exposed to cadmium at or above the action level by the employer, unless the employer demonstrates that the employee did not prior to the effective date of this section work for the employer in jobs with exposure to cadmium for an aggregated total of more than 60 months.

Previously exposed - includes all personnel who, during active duty or civilian employment in the Department of Defense, might previously have been exposed to cadmium at or above the action level:

- (1) Personnel whose worksite taskings meet the definition of construction work in 29 CFR 1926.63 with previous exposure to cadmium at or above the action level for an aggregate total of more than 12 months; or
- (2) Personnel whose worksite taskings meet the definition of general industry work in 29 CFR 1910.1027 with previous exposure to cadmium at or above the action level for an aggregate total of more than 60 months.

It is strongly recommended that personnel be considered as meeting the definition of construction work unless there is adequate documentation that the general industry (non-construction work) definition is met.

Currently exposed - all personnel who are or may be exposed to cadmium at or above the action level for 30 or more days per year. See Program #124.

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.1027](#)
2. OSHA STANDARD [29 CFR 1926.1127](#)
3. 29 CFR 1926.63
4. NAVENVIRHLTHCEN letter 6260 Ser 3213/6538 of 4 Jan 1993.

REVIEWED: Feb 2006, Gail San Juan, NP

CARBON BLACK**125**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
carbon black	FF5800000	1333-86-4	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Work history of:			
Exposure to dusts (coal, blast, Grit, sand, nuisance)	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Exposure to carcinogens	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	No	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Carbon black itself is not considered carcinogenic. However, solvent extracts of carbon black may contain carcinogens.

REFERENCES:

[NIOSH Criteria For A Recommended Standard. Occupational Exposure to Carbon Black, DHHS \(NIOSH\) Publication No. 78-204, Sept 1978 \(http://www.cdc.gov/niosh/78-204.html\)](http://www.cdc.gov/niosh/78-204.html).

REVISED: Feb 2006, Gail San Juan, NP.

CARBON DISULFIDE**126**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
carbon disulfide	FF6650000	75-15-0		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Use of nitrate medication (nitroglycerine)	Yes	Annual	No	
Headache, dizziness, light-headedness, weakness	Yes	Annual	No	
Nausea or vomiting	Yes	Annual	No	
Tremors	Yes	Annual	No	
Change or loss of vision	Yes	Annual	No	
Eye irritation	Yes	Annual	No	
Glaucoma	Yes	Annual	No	
Chest pain, angina, heart attack	Yes	Annual	No	
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No	
Infertility or miscarriage (self or spouse)	Yes	Annual	No	
Epilepsy (seizure disorder)	Yes	Annual	No	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No	
Mental/emotional illness	Yes	Annual	No	
Depression, diff concentrating, excessive anxiety	Yes	Annual	No	
Personality change	Yes	Annual	No	
Family history of:				
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Serum chemistry:				
BUN and creatinine	Yes	Annual	No	
Cholesterol	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Cardiology:			
Electrocardiogram	Yes	Annual	No
Radiology:			
Chest x-ray (PA)	Yes	no	no
Optometry:			
Vision screen (visual acuity)	Yes	Annual	No
Visual fields	Yes	Annual	No
Comments on laboratory results:			
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Cardiovascular system	Yes	Annual	No
Eyes	Yes	Annual	No
Kidney	Yes	Annual	No
Liver	Yes	Annual	No
Skin	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
REFERENCES:

1. NIOSH Pocket Guide to Chemical Hazards, current edition; Agency for Toxic Substances and Disease Registry (ATSDR) (<http://www.atsdr.cdc.gov/toxprofiles/tp82.html>);
2. NIOSH Criteria for a Recommended Standard. Occupational Exposure to Carbon Disulfide, DHHS (NIOSH) Publication No. 77-156, May 1977 (<http://www.cdc.gov/niosh/77-156.html>)

REVIEWED: FEB 2006, Gail SAN JUAN, NP

CARBON MONOXIDE**127**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
carbon monoxide	FG3500000	630-08-0		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Blood diseases (anemia)	Yes	Annual	No	
Use of nitrate medication (nitroglycerine)	Yes	Annual	No	
Headache, dizziness, light-headedness, weakness	Yes	Annual	No	
Change or loss of vision	Yes	Annual	No	
Chest pain, angina, heart attack	Yes	Annual	No	
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No	
Shortness of breath	Yes	Annual	No	
Thyroid disease (heat or cold intolerance)	Yes	Annual	No	
Depression, difficulty concentrating, excessive anxiety				
Family history of:				
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Hematology:				
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	No	No	
Serum chemistry:				
Cholesterol	Yes	No	No	
Cardiology:				
Electrocardiogram	Yes	No	No	
Comments on laboratory results:	Yes	No	No	
Physical examination:				

EXAM ELEMENT	BASE	PERI	TERM
Vital signs	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED 10/97.

CARBON TETRACHLORIDE**128**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
carbon tetrachloride	FG4900000	56-23-5		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Hepatitis or jaundice	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Use of barbiturates	Yes	Annual	Yes	
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes	
Nausea or vomiting	Yes	Annual	Yes	
Eye irritation	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Work history of:				
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	Yes	
Family history of:				
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Hematology:				
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes	
Differential white blood cell count	Yes	Annual	Yes	
Serum chemistry:				
Liver profile to include:				
SGOT (AST), Total Bilirubin, alkaline Phos.	Yes	No	Yes	

EXAM ELEMENT	BASE	PERI	TERM
SGOT (AST)	*	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

* SGOT for baseline is included in baseline liver profile. Only a SGOT is required on annual test.

PROGRAM DESCRIPTION:

REFERENCES:

[Occupational Medical Surveillance Manual, DOD 6055.5-M](#)

(<https://www.denix.osd.mil/denix/Public/ESPrograms/Safety/Documents/6055.5/manual.html#2>)

REVISED: Oct 2006, COL Laura Torres-Reyes.

CHLOROFORM

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STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
chloroform	FS9100000	67-66-3	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Treatment with steroids or cytotoxic (drugs)	Yes	Annual	Yes
Use of barbiturates	Yes	Annual	Yes
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes
Nausea or vomiting	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Problems with numbness, tingling, weakness	Yes	Annual	Yes
In hands or feet			
Migraine headache	Yes	Annual	Yes
Work history of:			
Exposure to skin irritants	Yes	Annual	Yes
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes
Differential white blood cell count	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Annual	Yes
BUN and creatinine	Yes	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Cardiology:			
Electrocardiogram	Yes	No	Yes
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Abdomen	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED 10/97.

BIS-CHLOROMETHYL ETHER**131**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
bis chloromethyl ether	KN1575000	542-88-1		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Coughing up blood (hemoptysis)	Yes	Annual	Yes	
Cough (dry or productive)	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Family history of:				
Genetic disease (including children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Radiology:				
Chest x-ray (PA)	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				
Respiratory system	Yes	Annual	Yes	
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes	
Immunocompetence (lymphatic system)	Yes	Annual	Yes	
Other appropriate examination (specify):	Yes	Annual	Yes	
Comments on physical examination:	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

1. OSHA Standard 29 CFR 1910.1003
2. 29 CFR 1926.1103
2. Former standard 29 CFR 1910.1008.

PROGRAM REVIEWED: 3/2000.

BETA-CHLOROPRENE**132**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
beta-chloroprene	EI9625000	126-99-8		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Hepatitis or jaundice	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Eye irritation	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes	
Migraine headache	Yes	Annual	Yes	
Depression, diff concentrating, excessive anxiety	Yes	Annual	Yes	
Work history of:				
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to respiratory irritants	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Hematology:				
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes	
Differential white blood cell count	Yes	Annual	Yes	
Serum chemistry:				

EXAM ELEMENT	BASE	PERI	TERM
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatase	Yes	No	Yes
BUN and creatinine	*	Annual	Yes
SGOT (AST)	Yes	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Cardiology:			
Electrocardiogram	Yes	No	Yes
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Substance(s) suspected human mutagenic/fetotoxic effects.	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED 10/97

CHROMIC ACID/CHROMIUM (VI)

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STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
chromic acid	GB2450000	7738-94-
chromic acid, zinc salt	GB3290000	13530-65-9
dichromic acid, disodium salt	HX7700000	10588-01-9
chromium (vi) water soluble	GB4200000	7440-47-3
chromium (vi) water insoluble	GB4200000	7440-47-3
chromic acid, lead (+2) salt (1:1)	GB2975000	7758-97-6
chromic acid, di-t-butylester	GB2900000	1189-85-1
chromic acid, disodium salt	GB2955000	7775-11-3
chromic acid, dispotassium salt	GB2940000	7789-00-6
chromium phosphate	GB6840000	7789-04-
chromium carbonyl	GB5075000	13007-92-6
chromic acid, zinc hydroxide hydrate (1:2, 2:1)	GB3260000	15930-94-6
chromium (vi) oxide (1:3)	GB6650000	1333-82-0
chromic acid, strontium salt (1:1)	GB3240000	7789-06-2
chromic acid, calcium salt (1:1)	GB2750000	13765-19-0
barium chromate (vi)	CQ8760000	10294-40-3
chromate (1-) hydroxyoctaoxidizinicated, potassium	GA9170000	1103-86-9
c.i. pigment yellow	GB3300000	37300-23-5
chromium chromate	GB2850000	24613-89-6

Program Frequency

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Perforation of nasal septum	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Coughing up blood (hemoptysis)	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Work history of:			
Exposure to dusts (coal, blast, grit, sand, nuisance)	Yes	Annual	Yes
Exposure to chromium or chromic acid	Yes	Annual	Yes
Exposure to skin irritants	Yes	Annual	Yes
Exposure to carcinogens	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes
Differential white blood cell count	Yes	Annual	Yes
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	Yes
BUN and creatinine	Yes	Annual	Yes
SGOT (AST)	Yes	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Radiology:			
Chest x-ray (PA)	Yes	no	Yes
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Mucous membranes	Yes	Annual	Yes
Nasal mucosa (septal perforation)	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Beginning at the tenth year of exposure the chest x-ray may be indicated annually depending on the individual's work exposure, smoking status and work habits.

REFERENCES:

OSHA STANDARD 29 CFR 1910, 1915, 1917, 1918, 1926 (Occupational exposure to hexavalent chromium), final rule effective 30 May 2006

REVIEWED: MAR 2006, Sue Davis

COAL TAR PITCH VOL./POLYCYCLIC AROMATIC HYDROCARBONS

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STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
coal tars (coal tar	GF8600000	8007-45-2
coal tar extracts and high temperature tars	GF8600100	65996-89-6
coal tar pitch volatiles	GF8655000	65996-93-2
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer(cytotoxic) drugs	Yes	Annual	Yes
Coughing up blood (hemoptysis)	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Pneumonia	Yes	Annual	Yes
Problems with urination/blood in urine	Yes	Annual	Yes
Work history of:			
Exposure to skin irritants	Yes	Annual	Yes
Exposure to respiratory irritants	Yes	Annual	Yes
Exposure to carcinogens	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Urinalysis:			
Routine			
Urinalysis with microscopic	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Radiology:			
Chest x-ray (PA)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Weight	Yes	Annual	Yes
Special attention in examination to:			
Mucous membranes	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc.)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
REFERENCES:

1. 29 CFR 1910.1002

2. 29 CFR 1910.1029

NOTE: 29 CFR 1910.1029 applies to workers exposed to coke oven emissions and has specific requirements which must be followed in addition to those listed above. These include sputum and urine cytology and spirometry. To the extent that a worker's exposure to PAH resembles that of coke oven emissions, these additional elements must be considered. While sputum cytology is not of proven benefit, urine cytology has been shown in certain high risk groups to identify asymptomatic cancers. Reference (4) provides more elaborate discussion of the issues.

3. 29 CFR 1926.1102

4. 29 CFR 1926.1129

5. Polycyclic Aromatic Hydrocarbons, Fifth Annual Report on Carcinogens, Summary 1989, U.S. Department of Health and Human Services Public Health Service, Rockville, MD, Technical Resources, Inc. 1989:242-246.

6. Journal of Occupational Medicine 1990 (32): Entire Issue.

PROGRAM REVIEWED 3/2000

COBALT**208**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
cobalt (metal fume and dust)	GF8750000	7440-48-4	
cobalt (II) oxide	GG2800000	1307-96-6	
cobalt (II) sulfide	GG3325000	1317-42-6	
cobalt (II) chloride	GG9800000	7646-39-9	
cemented tungsten carbide (see #200 for stressors)			
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Work history of:			
Exposure to skin irritants			
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	Penta-e	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Cardiovascular system	Yes	Annual	No
Respiratory system	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Skin (rash, erosion, ulcer, pigment, eczema, etc.)	Yes	Annual	No
Other appropriate examination (specify):	Yes	Annual	No
Comments on physical examination	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED 10/97.

CRESOL**135**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
cresol (o, m, p-mixture)	GO5950000	1319-77-3
m-cresol	GO6125000	108-39-4
o-cresol	GO6300000	95-48-7
p-cresol	GO6475000	106-44-5
2,6-ditert-butyl-p-cresol	GO7875000	128-37-0
4,4'-thiobis(6-tert-butyl-m-cresol)	GP3150000	96-69-5
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Hepatitis or jaundice	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Nausea or vomiting	Yes	Annual	No
Chest pain, angina, heart attack	Yes	Annual	No
Coughing up blood (hemoptysis)	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Liver disease	Yes	Annual	No
Kidney disease	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	No
BUN and creatinine	Yes	Annual	No
SGOT (AST)	*	Annual	No
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	No
Radiology:			
Chest x-ray (PA)	Yes	No	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Liver	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED 10/97

1,2-DIBROMO-3-CHLOROPROPANE (DBCP)**137**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
1,2-dibromo-3-chloropropane	TX8750000	96-12-8		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Blood diseases (anemia)	Yes	Annual	Yes	
Skin diseases	Yes	Annual	Yes	
Lung/resp disease	Yes	Annual	Yes	
Mucosal irritation	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Problems with balance and coordination	Yes	Annual	Yes	
Depression, difficulty concentrating, excessive anxiety	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Serum chemistry:				
Serum total estrogen (female)	Yes	Annual	Yes	
Serum follicle stimulating hormone (FSH)	Yes	Annual	Yes	
Serum luteinizing hormone (LH)	Yes	Annual	Yes	
Additional lab tests:				
Sperm count (male)	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:	Yes	Annual	Yes	
CNS	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
HEENT	Yes	Annual	Yes
Mucous membranes	Yes	Annual	Yes
Respiratory	Yes	Annual	Yes
GU (including testicle size)	Yes	Annual	Yes
Body habitus	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Use of 1,2-dibromo-3-chloropropane (DBCP) as a fumigant in the U.S. has been banned by the EPA. Limited manufacturing may still be occurring.

Medical surveillance is to be made available in regulated areas and to workers exposed to DBCP in emergency situations. The OSHA standard on DBCP does not apply to: 1) exposure to DBCP which results solely from the application and use of DBCP as a pesticide; or 2) the storage, transportation, distribution, or sale of DBCP in intact containers sealed in such a manner as to prevent exposure to DBCP vapors or liquids.

All medical examinations and procedures shall be performed by or under the supervision of a licensed physician.

Per 29 CFR 1910.1044, following exposure in an emergency situation the employer shall provide the employee with a sperm count test as soon as practicable, or, if the employee has a history of vasectomy or is unable to produce a semen specimen, the hormone tests contained in paragraph (m)(2)(iii) of this section. The employer shall provide these same tests at a **three** month follow-up.

In addition, if the employee for any reason develops signs or symptoms commonly associated with exposure to DBCP, the employer shall provide the employee with a medical examination which shall include those elements considered appropriate by the examining physician, in accordance with paragraph 1910.1044(m)(3).

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.1044](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10061)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10061);
2. 29 CFR 1926.1144
3. Journal of Occupational Medicine 32(10) 979-984,1990.
4. HAZ-MAP at National Library of Medicine http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=273

5. Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs
<http://www.atsdr.cdc.gov/tfacts36.html>

PROGRAM REVIEWED: April 2007, Mari Pohlhaus, NP

3,3'-DICHLOROBENZIDINE**138**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
3,3'-dichlorobenzidine	DD0525000	91-94-1		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Problems with urination/blood in urine	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Family history of:				
Genetic disease (including children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				
Skin (rash, erosion, ulcer, pigment, eczema, etc.)	Yes	Annual	Yes	
Genitourinary tract	Yes	Annual	Yes	
Immunocompetence (lymphatic system)	Yes	Annual	Yes	
Other appropriate examination (specify)	Yes	Annual	Yes	
Comments on physical examination:	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.1003](#)
2. [29 CFR 1926.1103](#)
3. Former standard 29 CFR 1910.1007. [HAZ-MAP at National Library of Medicine \(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=277\)](#)
4. Agency for Toxic Substances and Disease Registry (ATDSR) ToxFAQs - [http://www.atsdr.cdc.gov/tfacts108.html](#)

REVIEWED: JAN 2006, Dr. Jeffrey Derr

4-DIMETHYLAMINOAZOBENZENE**139**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
4-dimethylaminoazobenzene	BX7350000	60-11-7	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Problems with urination/blood in urine	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Impotence or sexual dysfunction	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Family history of:			
Genetic disease (including children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Skin (rash, erosion, ulcer, pigment, eczema, etc.)	Yes	Annual	Yes
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			

EXAM ELEMENT	BASE	PERI	TERM
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.1003](#)
2. 29 CFR 1926.1103
3. Former standard 29 CFR 1910.1015. [HAZ-MAP at National Library of Medicine \(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=282\)](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=282)

REVIEWED: JAN 2006, Dr. Jeffrey Derr.

DINITRO-ORTHO-CRESOL**140**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
dinitro-o-cresol	GO9625000	534-52-1		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Skin disease	Yes	Annual	No	
Lung or resp disease (COPD, bronchitis, pneumonitis)	Yes	Annual	No	
Use of nitrate medication (nitroglycerine)	Yes	Annual	No	
Weight loss	Yes	Annual	No	
Glaucoma	Yes	Annual	No	
Liver disease	Yes	Annual	No	
Kidney disease	Yes	Annual	No	
Thyroid disease (heat or cold intolerance)	Yes	Annual	No	
Depression, difficulty concentrating, excessive anxiety	Yes	Annual	No	
Work history of:				
Exposure to dusts (coal, blast grit, sand, nuisance)	Yes	Annual	No	
Exposure to skin irritants	Yes	Annual	No	
Exposure to respiratory irritants	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	No	
Comments on laboratory results:	Yes	Annual	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				
Central nervous system	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Cardiovascular system	Yes	Annual	No
Eyes	Yes	Annual	No
Abdomen	Yes	Annual	No
Liver	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Thyroid	Yes	Annual	No
Metabolic disturbance (fever, tachycardia)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

72 hour observation by medical attendants required in all cases of splashes, spills or leaks where significant skin or eye contact with or inhalation of materials occurs. Weekly sampling and analysis of workers blood for DNOC content required during period of expected exposure in the following agriculturally related occupations: mixers, loaders, ground and aerial applicators, and flaggers.

REFERENCES:

1. [NIOSH Criteria](http://www.cdc.gov/niosh/78-131.html) for a Recommended Standard. [Occupational Safety and Health Guideline for Dinitro-ortho-cresol](http://www.cdc.gov/niosh/critdoc2.html) (<http://www.cdc.gov/niosh/78-131.html>), NIOSH Pub. 78-131 and NIOSH Criteria Documents (<http://www.cdc.gov/niosh/critdoc2.html>)_No. [89-104, Supplement II-CHG](http://www.cdc.gov/niosh/pdfs/0234.pdf) (<http://www.cdc.gov/niosh/pdfs/0234.pdf>);
2. Hayes WJ, Pesticides Studied in Man, Baltimore: Williams and Wilkins; 1982:466-470. 3. [HAZ-MAP at National Library of Medicine](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=467), http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=467

REVISED: JAN 2006, Dr. Jeffrey Derr.

REVIEWED: MAR 2006, Sue Davis

DIOXANE**141**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
dioxane	JG8225000	123-91-1		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)				
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Hepatitis or jaundice	Yes	Annual	No	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No	
Coughing up blood (hemoptysis)	Yes	Annual	No	
Shortness of breath	Yes	Annual	No	
Liver disease	Yes	Annual	No	
Kidney disease	Yes	Annual	No	
Work history of:				
Exposure to respiratory irritants	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Serum chemistry:				
Liver profile to include:				
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Annual	No	
BUN and creatinine	Yes	Annual	No	
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	No	
Comments on laboratory results:	Yes	Annual	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				
Liver	Yes	Annual	No	
Mucous membranes	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Nasal mucosa	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

PROVIDER COMMENTS: Nares exam is recommended in NIOSH std.

REFERENCES:

1. [NIOSH Criteria for a Recommended Standard. Occupational Exposure to Dioxane](http://www.cdc.gov/niosh/77-226.html), DHHS Pub. No. 77-226 (<http://www.cdc.gov/niosh/77-226.html>);
2. [HAZ-MAP at National Library of Medicine](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=408) (http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=408)

REVIEWED: JAN 2006, Dr. Jeffery Derr.

EPICHLOROHYDRIN**142**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
epichlorohydrin	TX4900000	106-89-8		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Hepatitis or jaundice	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Work history of:				
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to respiratory irritants	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Serum chemistry:				
Liver profile to include:				
SGOT (AST), Total Bilirubin, alkaline phosphatase	Yes	No	Yes	
BUN and creatinine	Yes	Annual	Yes	
SGOT (AST)	*	Annual	Yes	
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	Yes	
Radiology:				
Chest x-ray (PA)	Yes	No	Yes	
Spirometry:				

EXAM ELEMENT	BASE	PERI	TERM
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Eyes	Yes	Annual	Yes
Kidneys	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Mucous membranes	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

1. [NIOSH Criteria for a Recommended Standard. Occupational exposure to Epichlorohydrin, DHHS Pub. No. 76-206 \(http://www.cdc.gov/niosh/76-206.html\)](http://www.cdc.gov/niosh/76-206.html);
2. [NIOSH Current Intelligence Bulletin #30: Epichlorohydrin \(http://www.cdc.gov/niosh/79105_30.html\)](http://www.cdc.gov/niosh/79105_30.html). [HAZ-MAP at National Library of Medicine \(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=358\)](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=358); NIOSH Criteria Documents <http://www.cdc.gov/niosh/critdoc2.html>

REVIEWED: JAN 2006, Dr. Jeffrey Derr.

ETHOXY AND METHOXY ETHANOL**143**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
2-ethoxyethanol	K8050000	110-80-5	
2-methoxyethanol	KL5775000	109-86-4	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Blood diseases (anemia)	Yes	Annual	No
Skin disease	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Kidney disease	Yes	Annual	No
Current pregnancy (self or spouse)	Yes	Annual	No
Infertility or miscarriage (self or spouse)	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Depression, diff concentrating, excessive anxiety	Yes	Annual	No
Work history of:			
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Family history of:			
Blood diseases (anemia)	Yes	Annual	No
Genetic disease (including children)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Annual	Yes
BUN and creatinine	Yes	Annual	Yes
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Genitourinary tract	Yes	Annual	No
Testes (male)	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Special notations:			
Substance(s) known mutagenic or fetotoxic effects	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
REFERENCES:

1. The Glycol Ethers, with Particular Reference to 2-Methoxyethanol and 2-Ethoxyethanol: Evidence of Adverse Reproductive Effects, NIOSH [Current Intelligence Bulletin 39](#) (http://www.cdc.gov/niosh/83112_39.html), (NIOSH) Pub. No. 83-112.
2. [HAZ-MAP 2-Ethoxyethanol](#) (http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=131)
3. [HAZ-MAP 2-Methoxyethanol](#) (http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=133)
4. [HAZ-MAP Glycol Ethers](#) (http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=688)

REVIEWED: JAN 2006, Dr. Jeffrey Derr.

ETHYLENE DIBROMIDE

145

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
ethylene dibromide	KH9275000	106-93-4	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is you work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Blood diseases (anemia)	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Eye irritation	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Impotence or sexual dysfunction	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Work history of:			
Exposure to skin irritants	Yes	Annual	Yes
Exposure to respiratory irritants	Yes	Annual	Yes
Family history of:			
Blood diseases (anemia)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Annual	Yes
BUN and creatinine	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Kidney	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Substance(s) known mutagenic or fetotoxic effects	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
REFERENCES:

1. [NIOSH Criteria for a Recommended Standard \(http://www.cdc.gov/niosh/critdoc2.html\)](http://www.cdc.gov/niosh/critdoc2.html).
[Occupational exposure to Ethylene Dibromide, NIOSH Pub. No. 77-221 \(http://www.cdc.gov/niosh/77-221.html\)](http://www.cdc.gov/niosh/77-221.html).
2. [HAZMAP Ethylene Dibromide](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=34) , http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=34
3. [EXTOXNET Ethylene Dibromide \(http://extoxnet.orst.edu/pips/edb.htm \)](http://extoxnet.orst.edu/pips/edb.htm)

REVIEWED: JAN 2006, Dr. Jeffrey Derr.

ETHYLENE DICHLORIDE**146**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
ethylene dichloride	KI0525000	107-06-2	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Weight loss	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Work history of:			
Exposure to skin irritants	Yes	Annual	Yes
Exposure to respiratory irritants	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes
Differential white blood cell count	Yes	Annual	Yes
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	Yes
BUN and creatinine	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
SGOT (AST)	*	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Eyes	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Ethylene dichloride is a central nervous system depressant and causes injury to the liver and kidneys. Animal studies indicate that it has little ability to adversely affect the reproductive or developmental processes except at maternally toxic levels.

REFERENCES:

1. [NIOSH Criteria for a Recommended Standard \(http://www.cdc.gov/niosh/critdoc2.html\)](http://www.cdc.gov/niosh/critdoc2.html). Occupational exposure to Ethylene Dichloride, NIOSH Pub. No. 78-211 (http://www.cdc.gov/niosh/78-211.html).
2. HAZMAP – Ethylene Dichloride http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=35
3. [Agency for Toxic Substances and Disease Registry \(ATSDR\) Tox FAQs – Ethylene Dibromide](http://www.atsdr.cdc.gov/tfacts38.html), <http://www.atsdr.cdc.gov/tfacts38.html>

REVISED: JAN 2006, Dr. Jeffrey Derr.

ETHYLENE OXIDE**148**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
ethylene oxide	KX2450000	75-21-8		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Blood diseases (anemia)	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Hepatitis or jaundice	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes	
Eye irritation	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Problems with balance, numbness, and tingling in hands or feet	Yes	Annual	Yes	
Work history of:				
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes	
Exposure to anesthetic gases	Yes	Annual	Yes	
Exposure to skin irritants	Yes	Annual	Yes	
Family history of:				
Blood diseases (anemia)	Yes	Annual	Yes	
Genetic disease (including children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				

Central nervous system	Yes	Annual	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Genitourinary tract	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Substance(s) suspected human mutagenic/fetotoxic effects	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:**PROVIDER COMMENTS:**

Refer to 29 CFR 1910.1047 for exams required following acute exposure or for exams with positive findings.

OSHA Standard requires a Physician's/provider's Written Opinion (PWO). A sample PWO can be found in [C11.2, Physician's/Provider's Written Opinion Samples](#) of the Medical Matrix and [29 CFR 1910.1047, CFR Appendix C](#) (http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD S&p_id=10073).

The examining physician if requested by the employee and deemed appropriate by the physician may order pregnancy tests or laboratory evaluation of fertility. Similar evaluation may be indicated if there are positive responses to medical history questions pertaining to the reproductive system.

REFERENCES:

1. [29 CFR 1919.1047](#).
2. 29 CFR 1926.1147
3. [NIOSH Current Intelligence Bulletin #35, Ethylene Oxide](#) (http://www.cdc.gov/niosh/81130_35.html)
4. [HAZ-MAP – Ethylene Oxide](#) (http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=21)
5. [OSHA Technical Link – Ethylene Oxide](#) (<http://www.OSHA.gov/SLTC/ethyleneoxide/index.html>)

REVIEWED: JAN 2006, Dr. Jeffrey Derr

ETHYLENIMINE**149**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
ethyleneimine	KX5075000	151-56-4		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Eye irritation	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Work history of:				
Exposure to skin irritants	Yes	Annual	Yes	
Family history of:				
Genetic disease (including children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Serum chemistry:				
Liver profile to include:				
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	Yes	
SGOT (AST)	*	Annual	Yes	
Radiology:				
Chest x-ray (PA)	Yes	No	Yes	
Spirometry:				
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				

EXAM ELEMENT	BASE	PERI	TERM
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Eyes	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures listed on OPNAV 5100/15?	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH OSH Guidelines to Chemical Hazards Supplement #2, U.S. Dept. of HHS, Public Health Service, CDC, NIOSH, division of Standards Development, Cincinnati, OH 1988;
2. [OSHA STANDARD 29 CFR 1910.1003](#). Former standard 29 CFR 1910.1012.
3. 29 CFR 1926.1103
4. [HAZ-MAP - Ethylenimine \(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=280\)](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_link?tbl=TblAgents&id=280).

REVIEWED: JAN 2006, Dr. Jeffrey Derr.

FLUORIDES (INORGANIC)**150**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
fluorides	LM6290000	16984-48-8
calcium fluoride	EW1760000	7789-75-5
carbonyl fluoride	FG6125000	353-50-4
perchloryl fluoride	SD1925000	7616-94-6
sulfuryl fluoride	WT5075000	2699-79-8
fluorine	LM6475000	7782-41-4
hydrofluoric acid	MW7875000	7664-39-3

Program Frequency

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Hepatitis or jaundice	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Eye irritation	Yes	Annual	No
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	No
Kidney disease	Yes	Annual	No
Muscle or joint problems	Yes	Annual	No
Work history of:			
Exposure to hydrogen fluoride or inorganic fluorides	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Urinalysis:			
Routine:			

EXAM ELEMENT	BASE	PERI	TERM
Urine fluoride - post shift	Yes	***	No
Radiology:			
Chest x-ray (PA)	Yes	No	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Teeth (acid erosion)	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

***At the time of the periodic examination, evaluate the need to perform a urine fluoride test. Post shift examination of the urine fluoride reflects recent exposure (in the preceding hours) and is not useful for biological monitoring if the employee has not been exposed to fluoride. The best time to obtain the urine specimen is at the end of a work week after the employee has been involved in tasks with fluoride exposure during that week. Because of the episodic exposure of most employees, the laboratory work obtained for the annual medical surveillance may not coincide with an exposure period. Ideally, the biological monitoring should be collected at the same time the Industrial Hygienist collects environmental samples.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

A preplacement spot urine fluoride is obtained for a baseline as an indicator of body burden.
(Reference DHEW Pub. No. 76-103)

REFERENCES:

NIOSH Criteria for a Recommended Standard.Occupational Exposure to Inorganic Fluorides
DHEW Pub. No. 76-103.

PROGRAM REVISED 10/97.

FORMALDEHYDE**151**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
formaldehyde	LP8925000	50-00-0	
Program Frequency		Annual (see provider comments)	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Recurrent skin rash	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes
Contact lens use	Yes	Annual	Yes
Eye irritation	Yes	Annual	Yes
Swelling in legs or feet (not caused by walking)	Yes	Annual	Yes
Coughing up blood (hemoptysis)	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes
Depression, difficulty concentrating, excessive anxiety	Yes	Annual	Yes
Work history of:			
Prior respirator use	Yes	Annual	Yes
If yes, any problems that interfered with use	Yes	Annual	Yes
Exposure to formaldehyde	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Radiology:			
Chest x-ray (PA) (frequency determined by Examining physician)	Yes	No	Yes
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Eyes	Yes	Annual	Yes
Mucous membranes	Yes	Annual	Yes
Nasal mucosa (septal perforation)	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required			
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS: The employer shall institute medical surveillance programs for all employees exposed to formaldehyde at concentrations at or exceeding the action level (0.5 ppm calculated as an 8-hour TWA) or exceeding the STEL (2 ppm as a 15-minute STEL). The employer shall make medical surveillance available for employees who develop signs and symptoms of overexposure to formaldehyde and for all employees exposed to formaldehyde in emergencies.

Respirators must be used during work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce employee exposure to or below the PEL (0.75 ppm as an 8-hour TWA). The OSHA standard requires an annual medical examination, including spirometry, for all workers whose exposure requires use of respirators for protection. For those workers whose exposure does not require a respirator, the examiner shall review the medical and work history and determine whether an examination is required.

Examinations are required for employees exposed to formaldehyde in an emergency. The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or

consultation for the purpose of medical removal or restriction. Refer to 29 CFR 1910.1048, Appendix C. (<http://www.OSHA.gov/SLTC/formaldehyde/standards.html>).

For those employees getting spirometry as part of their medical surveillance examination, the OSHA standard states that the spirometry should include, at a minimum, FVC, FEV1, and FEF (Forced Expiratory Flow).

The OSHA standard does not REQUIRE a Chest X-Ray as part of Formaldehyde medical surveillance. Examining physicians should use clinical judgment to decide whether to order/perform chest x-ray (see Appendix C of the OSHA standard).

Formaldehyde is sold commercially as formalin, a colorless liquid with a pungent odor, in aqueous solutions of 37%, 44%, or 50%.

A Physician's/provider's Written Opinion is required by OSHA Standard. A sample Physician's/provider's Written Opinion can be found in [C11.2, Physician's/Provider's Written Opinion Samples](#) of the Medical Matrix.

REFERENCES:

1. 29 CFR 1910.1048 at <http://www.OSHA.gov/SLTC/formaldehyde>
2. 29 CFR 1226.1148
3. Haz Map at <http://www.hazmap.nlm.nih.gov/>
4. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans at www.cie.iarc.fr/htdocs/announcements/vol188.htm
5. Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profiles at <http://www.atsdr.cdc.gov/toxprofiles/tp111.html>

REVIEWED: MAR 2006, Michael J. Meier, MD, MPH, LCDR MC USNR

GLYCIDYL ETHERS**152**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
resorcinol diglycidyl ether	VH1050000	101-90-6
oxirane, ((2-propenyloxy)methyl)	RR0875000	106-92-3
propane, 1,2-epoxy-3-isopropyl	TZ3500000	4016-14-2
ether, bis (2,3-epoxy propyl)	KN2350000	2238-07-5
propane, 1,2-epoxy-3-phenoxy	TZ3675000	122-60-1
propane, 1-butoxy-2,3-epoxy	TX4200000	2426-08-6
1-propanol,2,3-epoxy	UB4375000	556-52-5

Program Frequency

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Eye irritation	Yes	Annual	No
Infertility or miscarriage (self or spouse)	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Spirometry:			
Spirometry (FEV1, FVC, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	No	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED 10/97.

HYDRAZINES**155**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
1,1-dimethylhydrazine	MV2450000	57-14-7
hydrazine	MV7175000	302-01-2
phenylhydrazine	MV8925000	100-63-0
methyl hydrazine	MV5600000	60-34-4

Program Frequency:

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks (beer, wine, liquor)per week	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes
Eye irritation	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes
Thyroid disease (heat or cold intolerance)	Yes	Annual	Yes
Work history of:			
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes
Exposure to skin irritants	Yes	Annual	Yes
Exposure to respiratory irritants	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Hematology:			

EXAM ELEMENT	BASE	PERI	TERM
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alk. Phos	Yes	No	Yes
SGOT (AST)	*	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Thyroid	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on an annual basis.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

The potential for worker exposure is primarily through inhalation and skin absorption. Liquid in the eyes or on the skin causes severe burns. Hydrazine as the vapor or liquid is a severe skin and mucous membrane irritant, a convulsant, a hepatotoxin, and a carcinogen in animals.(1)

EMERGENCY NOTE: Exposure to high quantities of this agent can result in severe illness or death with some effects taking hours or days to materialize. In acute over-exposure situations, evaluation should take place in a setting where staff is able to assess and respond rapidly to life-threatening organ failure.

REFERENCES:

NIOSH Criteria for a Recommended Standard.Occupational Exposure to Hydrazines, DHEW
Pub. No. 78-172.

PROGRAM REVISED 10/97.

HYDROGEN CYANIDE/CYANIDE SALTS**156**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
hydrogen cyanide and cyanide salts	MW6825000	74-90-8
cyanides	GS7175000	57-12-5
cyanamide	GS5950000	420-04-2
cyanogen	GT1925000	460-19-5
cyanogen chloride	GT2275000	506-77-4
calcium cyanamide	GS6000000	156-62-7
methylacrylonitrile	UD1400000	126-98-7
methyl 2-cyanoacrylate	AS7000000	137-05-3
silver cyanide	VW3850000	506-64-9
calcium cyanide	EW0700000	592-01-8
potassium cyanide	TS8750000	151-50-8
sodium cyanide	VZ7525000	143-33-9
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: Have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week? (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Nausea or vomiting	Yes	Annual	No
Tremors	Yes	Annual	No
Chest pain, angina, heart attack	Yes	Annual	No
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	No
Problems with numbness, tingling, weakness in feet or hands	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Thyroid disease (heat or cold intolerance)	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Comments on laboratory results:	Yes	No	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Cardiovascular system	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc.)	Yes	Annual	No
Thyroid	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures listed on OPNAV 5100/15?	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
REFERENCES:

NIOSH Criteria for a Recommended Standard. Occupational Exposure to Hydrogen Cyanide Salts, DHEW Pub. No. 77-108.

PROGRAM REVISED 10/97.

HYDROGEN SULFIDE**158**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
hydrogen sulfide	MX1225000	7783-06-4		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No	
Headache, dizziness, light-headedness, weakness	Yes	Annual	No	
Weight loss	Yes	Annual	No	
Tremors	Yes	Annual	No	
Eye irritation	Yes	Annual	No	
Epilepsy (seizure disorder)	Yes	Annual	No	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No	
Mental/emotional illness	Yes	Annual	No	
Depression, diff concentrating, excessive anxiety	Yes	Annual	No	
Personality change	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Radiology:				
Chest x-ray (PA)	Yes	No	No	
Comments on laboratory results:	Yes	No	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				
Central nervous system	Yes	Annual	No	
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No	
Eyes	Yes	Annual	No	
Respiratory system	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

NIOSH Criteria for a Recommended Standard. Occupational Exposure to Hydrogen Sulfide,
DHEW Pub. No. 77-158.

PROGRAM REVISED 10/97.

HYDROQUINONE (DIHYDROXY BENZENE)**159**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
hydroquinone	MX3500000	123-31-9	
		Annual	
Program Frequency	BASE	PERI	TERM
EXAM ELEMENT			
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Eye irritation	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Optometry:			
Vision screen (visual acuity)	Yes	Annual	No
Slit lamp exam	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes (conjunctiva, sclera, lens, retina)	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Hydroquinone primarily affects the eyes. Chronic exposure produces changes characterized as: brownish discoloration of the conjunctiva and cornea confined to the interpalpebral tissue; small opacities of the cornea; and structural changes in the cornea that result in loss of visual acuity (3). Slit lamp exam is recommended to evaluate corneal changes and opacities.

REFERENCES:

1. NIOSH Criteria for a Recommended Standard. Occupational Exposure to Hydroquinone, DHEW Pub. No. 78-155; ACGIH Documentation on TLV's, 1987.

PROGRAM REVISED 10/97.

ISOCYANATES**196**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
benzene,2,4-diisocyanato-1-methyl	CZ6300000	584-84-9
hexame, 1,6-diisocyanate	MO1740000	822-06-0
isocyanic acid, methylenedi-p-phenylene ester	NQ9350000	101-68-8
isocyanic acid, 1,5-naphthylene ester	NQ9600000	3173-72-6
s-triazine-2,4,6-triol	XZ1800000	108-80-5
isocyanic acid, methylene(3,5,5-trimethyl 3 cyclohexylene) ester	NQ9370000	4098-71-9
isocyanic acid, methylenedi-4,1-cyclohexylene-ester	NQ9250000	5124-30-1
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Recurrent skin rash	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Wheezing	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Change or loss of vision	Yes	Annual	No
Eye irritation	Yes	Annual	No
Problems with balance and coordination	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Exposure to isocyanate foam or paint	Yes	Annual	No
Sensitization to isocyanates (TDI, MDI)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

Pulmonary function changes secondary to isocyanate exposure tend to occur at the end of the work-shift of work-week of exposure. The PFT, therefore, is of most use when performed at such end of work-shift times.

REFERENCES

1. [NIOSH SAFETY AND HEALTH TOPIC: ISOCYANATES](http://www.cdc.gov/niosh/topics/isocyanates)
<http://www.cdc.gov/niosh/topics/isocyanates>. Multiple informational sites listed under this main web site;
2. [NIOSH Pocket Guide to Chemical Hazards](#), current edition.

REVISED: FEB 2006, Linda Day

LEAD (INORGANIC)**161**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
lead (inorganic)	OF7525000	7439-92-1	
chromic acid, lead (2+) salt (1:)	GB2975000	7758-97-6	
lead phosphate (3:2)	OG3675000	7446-27-7	
Program Frequency	Semi-annual for biologic monitoring		
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Semi-A	Yes
Major illness or injury	Yes	***	Yes
Hospitalization or surgery	Yes	***	Yes
Cancer	Yes	***	Yes
Back injury	Yes	***	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	***	Yes
Have you ever smoked	Yes	***	Yes
Do you currently smoke (packs/day)	Yes	***	Yes
Heart disease, high blood pressure, or stroke	Yes	***	Yes
Current medication use (prescription or OTC)	Yes	***	Yes
Medication allergies	Yes	***	Yes
Any reproductive health concerns	Yes	***	Yes
Blood diseases (anemia)	Yes	***	Yes
Headache, dizziness, light-headedness, weakness	Yes	***	Yes
Heart disease, high blood pressure or stroke	Yes	***	Yes
Weight loss	Yes	***	Yes
Change or loss of vision	Yes	***	Yes
Change or loss of hearing	Yes	***	Yes
Frequent pain or tightness in chest	Yes	***	Yes
Palpitations	Yes	***	Yes
Insomnia or sleep disturbance	Yes	***	Yes
Unexplained fatigue	Yes	***	Yes
Chronic abdominal pain, vomiting, other GI symptoms	Yes	***	Yes
Kidney disease	Yes	***	Yes
Muscle or joint problems	Yes	***	Yes
Current pregnancy (self or spouse)	Yes	***	Yes
Impotence or sexual dysfunction	Yes	***	Yes
Infertility or miscarriage (self or spouse)	Yes	***	Yes
Problems with numbness, tingling, weakness	Yes	***	Yes
Depression, diff concentrating, excessive anxiety in hands or feet	Yes	***	Yes
Personality change	Yes	***	Yes

EXAM ELEMENT	BASE	PERI	TERM
Comments on medical history:	Yes	***	Yes
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	***	Yes
RBC morphology	Yes	***	Yes
Serum chemistry:			
BUN and creatinine	Yes	***	Yes
Blood lead and zinc protoporphyrin (ZPP)	Yes	Semi-A	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	***	Yes
Comments on laboratory results	Yes	Semi-A	Yes
Physical examination:			
Vital signs	Yes	***	Yes
Special attention in examination to:			
Central nervous system	Yes	***	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	***	Yes
Cardiovascular system	Yes	***	Yes
Gums (e.g. lead lines?)	Yes	***	Yes
Abdomen	Yes	***	Yes
Other appropriate examination (specify)	Yes	***	Yes
Comments on physical examination:	Yes	***	Yes
Special notations:			
Physician's/provider's written opinion required	Yes	***	Yes
Is surveillance/PPE consistent with exposures	Yes	Semi-A	Yes
Are any abnormalities related to exposures/occupations	Yes	***	Yes
Recommendations:	Yes	***	Yes

***A medical examination identical in scope to the baseline will be conducted annually for each person found to have a blood lead concentration at or above 30 ug/100gm at any time during the prior year.

PROGRAM DESCRIPTION:

A baseline examination is required prior to assignment to a position involving potential exposures to lead that equal or exceed the action level.

A termination examination identical in scope to the baseline, will be conducted just prior to the reassignment or termination of a person from a job requiring medical surveillance, unless a medical evaluation was done within the past twelve (12) months.

Guidelines for medical removal and follow-up, including written notification, are very specific. See 29 CFR 1910.1025, Appendix C, (http://www.OSHA-slc.gov/OshStd_data/1910_1025_APPP_C.html) and NAVOSH manuals for guidance. (<http://www.norva.navy.mil/navosh/instruct.htm>).

PROVIDER COMMENTS:

A Physician's/provider's Written Opinion is required by OSHA Standard. A sample Physician's/provider's Written Opinion can be found in [C11.2, Physician's/Provider's Written Opinion Samples](#).

This program consists of; preplacement medical examination, semiannual blood lead monitoring, and follow-up medical evaluations and blood lead analysis based on the results of blood lead analysis and physician opinion. Personnel are included in this program when industrial hygiene surveillance indicates that they perform work or are likely to be in the vicinity of an operation which generates airborne lead concentrations at or above the Action Level 30 days per year. Inclusion in this program is based on measured airborne concentrations without regard to respirator use, and therefore does not indicate that an individual is overexposed to lead.

REFERENCES:

1. 29 CFR 1910.1025
2. 29 CFR 1926.1125
3. [OPNAVINST 5100.23](#) (current series), Chapter 21;
4. [OPNAVINST 5100.19](#) (current series), Chapter B10.
5. Industrial Hygiene Sampling Guide, consolidated Industrial Hygiene Laboratories, Current Edition.

PROGRAM REVIEWED 3/2000

MANGANESE OXIDE FUMES**210**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
manganese (and compounds)	OO9275000	7439-96-5		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Blood diseases (anemia)	Yes	Annual	No	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No	
Headache, dizziness, light-headedness, weakness	Yes	Annual	No	
Tremors	Yes	Annual	No	
Cough	Yes	Annual	No	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No	
Mental/emotional illness	Yes	Annual	No	
Depression, diff concentrating, excessive anxiety	Yes	Annual	No	
Personality change	Yes	Annual	No	
Work history of:				
Exposure to dusts (coal, blast, grit, sand, nuisance)	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Radiology:				
Chest x-ray (PA)	Yes	No	No	
Spirometry:				
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	No	
Comments on laboratory results:	Yes	No	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				
Central nervous system	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Respiratory system	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED 10/97.

MERCURY

163

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
mercury (aryl and inorganic compounds)	OV4550000	7439-97-6
mercury (alkyl compounds)	OV4550000	7439-97-6
chloroethyl mercury	OV9800000	107-27-7
mercury (vapor)	OV4550000	7439-97-6
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes
Weight loss	Yes	Annual	Yes
Tremors	Yes	Annual	Yes
Tooth or gum disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Problems with balance and coordination	Yes	Annual	Yes
Problems with numbness, tingling, weakness, In hands or feet	Yes	Annual	Yes
Depression, difficulty concentrating, excessive anxiety	Yes	Annual	Yes
Personality change	Yes	Annual	Yes
Comments on medical history:			
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes
Differential white blood cell count	Yes	Annual	Yes
Serum chemistry:			

EXAM ELEMENT	BASE	PERI	TERM
BUN and creatinine	Yes	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Urine chemistry:			
Urine mercury	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:			
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Urine mercury levels can be performed on spot urine collections, but should be corrected to creatinine level.

Acute exposure to high concentrations of mercury vapor causes severe respiratory damage, whereas chronic exposure to lower levels is primarily associated with central nervous system damage. Acute mercury poisoning can occur from inhalation of high concentrations of mercury vapor or dust. If the concentration of mercury vapor is high enough, the exposure will result in tightness and pain in the chest, difficulty in breathing, coughing, and shortly thereafter, a metallic taste, nausea, abdominal pain, vomiting diarrhea, headache, and occasionally albuminuria.

With chronic exposure to mercury vapor, early signs are nonspecific and include weakness, fatigue, anorexia, loss of weight and disturbances of gastrointestinal function. At higher exposure levels, a characteristic mercurial tremor appears. Personality changes are the most common findings in chronic mercurial poisoning. Symptoms may first occur after a very few weeks of exposure, or they may not become apparent for several years. It has been estimated that the probability of manifesting typical mercurialism with tremor and behavioral changes will increase with exposures to concentrations of 0.1mg/m3 or higher. There is no evidence of effects at concentrations below 0.01 mg/m3.

REFERENCES:

[NIOSH Criteria for a Recommended Standard. Occupational Exposure to Inorganic Mercury, DHHS Pub. No. 73-11024 \(http://www.cdc.gov/niosh/73-11024.html\).](http://www.cdc.gov/niosh/73-11024.html)

REVISED: FEB 06, CDR Fran Litow

METHYL BROMIDE**215**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
methyl bromide	PA4900000	74-83-9	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Tremors	Yes	Annual	No
Change or loss of vision	Yes	Annual	No
Eye irritation	Yes	Annual	No
Epilepsy (seizure disorder)	Yes	Annual	No
Neurologic disorder, gait change, paresthesia, Coordination loss	Yes	Annual	No
Mental/emotional illness	Yes	Annual	No
Personality change	Yes	Annual	No
Problems with balance and coordination	Yes	Annual	No
Problems with numbness, tingling, weakness in Hands or feet	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	No
Optometry:			
Vision screen (visual acuity)	Yes	Yes	No
Comments on laboratory results:			
Physical examination:			
Vital signs	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify):	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

PROVIDER COMMENTS: Although X-ray is only done for baseline exam (per NIOSH reference above), changes in PFTs should prompt further evaluation, including X-ray.

REFERENCES:

1. [NIOSH/OSHA Occupational Health Guidelines for Methyl Bromide, U.S. Department Of Health And Human Services, Sept.1978](http://www.cdc.gov/niosh/pdfs/0400.pdf) (<http://www.cdc.gov/niosh/pdfs/0400.pdf>);
2. Gunther FA, Gunther JD. Residue Reviews. New York, NY: Springer-Verlag; 1983: vol.88:102-150;
3. Cralley LJ, Cralley LV. Patty's Industrial Hygiene And Toxicology 3rd Ed. New York, NY: John Wiley & Sons, Inc. 1981: vol.2B:3442-3444, 3472-3478;
4. [Reigart JR, and Roberts JR. Recognition and Management of Pesticide Poisonings, Fifth Edition. United States Environmental Protection Agency. 1999:132-133](http://epa.gov/oppfead1/safety/healthcare/handbook/handbook.htm) <http://epa.gov/oppfead1/safety/healthcare/handbook/handbook.htm> .

REVISED: FEB 2006, CDR Fran Litow

METHYL CHLOROMETHYL ETHER**166**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
chloromethyl methyl ether	KN6650000	107-30-2	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Treatment with steroids or chemotherapy/cytotoxic drugs	Yes	Annual	Yes
Decreased immunity	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Impotence or sexual dysfunction	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Family history of:			
Genetic disease (including children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Respiratory system	Yes	Annual	Yes
Lymphatic system	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			

EXAM ELEMENT	BASE	PERI	TERM
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:**PROVIDER COMMENTS:**

Commercial grade CMME is contaminated with bis-Chloromethylether. Commercial grade CMME is a known human carcinogen.

REFERENCES:

1. [29 CFR 1910.1003](#).
2. [29 CFR 1926.1103](#)
3. Former standard 29 CFR 1910.1006.
4. [Occupational Safety and Health Guideline for Chloromethyl Methyl Ether Potential Human Carcinogen](#). NIOSH. 1988.
5. [Reference for PFTs is NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards. DHHS \(NIOSH\) Pub No. 88-118, 1988](#)
6. IARC Monograph on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluation of Carcinogenicity: An updating of IARC Monographs, Vol 1-42, Supp 7, pp 131-132. Lyon International Agency for Research on Cancer, 1987.

REVIEWED: FEB 2006, CDR Fran Litow

4,4'-METHYLENE BIS (2-CHLOROANILINE) (MOCA) (ALSO MBOCA) 167

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
4,4'-methylene bis(2-chloroaniline)	CY1050000	101-14-4		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/150)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Current pregnancy (self or spouse)	Yes	Annual	Yes	
Impotence or sexual dysfunction	Yes	Annual	Yes	
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes	
Work history of:				
Exposure to carcinogens	Yes	Annual	Yes	
Family history of:				
Genetic disease (including children)	Yes	Annual	Yes	
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Hematology:				
Complete blood count	Yes	Annual	Yes	
Serum chemistry:				
Liver profile to include:				
SGOT (AST), TOTAL BILIRUBIN, ALKALINE PHOSPHATATE	Yes	No	Yes	
SGOT (AST)	*	Annual	Yes	
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Spirometry:				

EXAM ELEMENT	BASE	PERI	TERM
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Liver	Yes	Annual	Yes
Kidney	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Hematopoetic system (bruising, petechiae, pallor)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

[OSHA technical link revised 26 April 1999: \(http://www.OSHA.gov/SLTC/healthguidelines/4-4-methylenebis-2-chloroaniline/recognition.html\)](http://www.OSHA.gov/SLTC/healthguidelines/4-4-methylenebis-2-chloroaniline/recognition.html)

REVISED: FEB 2006, CDR Fran Litow

METHYLENE CHLORIDE (DICHLOROMETHANE)**168**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
methylene chloride	PA8050000	75-09-2		
	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Blood diseases (anemia)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Use of nitrate medication (nitroglycerine)	Yes	Annual	Yes	
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes	
Eye irritation	Yes	Annual	Yes	
Chest pain, angina, heart attack	Yes	Annual	Yes	
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	Yes	
Shortness of breath	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes	
Work history of:				
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to respiratory irritants	Yes	Annual	Yes	
Exposure to carcinogens	Yes	Annual	Yes	
Exposure to methylene chloride, dichloromethane, methylene dichloride	Yes	Annual	Yes	
Family history of:				
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Hematology:			
Hematocrit (HCT)	Yes	No	No
Serum chemistry:			
Liver profile to include:			
SGOT (AST), total bilirubin, alk. Phos, alt	Yes	No	Yes
Cholesterol	Yes	No	No
Electrocardiogram	Yes	No	No
Comments on laboratory results:	Yes	***	Yes
Physical examination:			
Vital signs	Yes	***	Yes
Special attention in examination to:			
Central nervous system	Yes	***	Yes
Cardiovascular system	Yes	***	Yes
Eyes	Yes	***	Yes
Liver	Yes	***	Yes
Respiratory system	Yes	***	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	***	Yes
Other appropriate examination (specify)	Yes	***	Yes
Comments on physical examination:	Yes	***	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	***	Yes
Physician's/provider's written opinion required	Yes	***	Yes
Is surveillance/PPE consistent with exposures	Yes	***	Yes
Are any abnormalities related to exposures/occupations	Yes	***	Yes
Recommendations:	Yes	***	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis. Termination examination shall be done when an employee is terminated, or on reassignment to an area where exposure is consistently at or below the action level (AL) and short term exposure limit (STEL), if six months or more have elapsed since the last medical evaluation. See Appendix B of OSHA Standard for guidance on labs. (http://www.OSHA-slc.gov/OshStd_data/1910_1052_APP_B.html). A sample Physician's/provider's Written Opinion can be found in [C11.2, Physician's/Provider's Written Opinion Samples](#).

***The employer shall update the medical and work history for each affected employee annually. The employer shall provide periodic physical examinations, including appropriate laboratory surveillance, as follows:

FREQUENCY OF EXAMINATION

AGE	FREQUENCY
< 45 yrs	TRIENNIAL
45 yrs and >	Annual

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Multiple Health Care Professional review Mechanism. If the employer selects the initial physician or licensed health care professional (LHCP) to conduct any medical examination or consultation to an employee under this paragraph (j)(11), the employer shall notify the employee of the right to seek a second opinion each time the employer provides the employee with a copy of the written opinion of that LHCP. (http://www.OSHA-c.gov/OshStd_data/1910_1052.html).

Affected employees: Employees who are, or may be exposed to methylene chloride as follows:

- (1) At or above the AL on 30 or more days a year, or above the 8-hour PEL or STEL on 10 or more days per year;
- (2) Above the 8hr-TWA, PEL or STEL for any time period where an employee has been identified by a physician or other licensed health care professional as being at risk from cardiac disease or from some other serious methylene chloride-related health condition, and such employee requests inclusion in the medical surveillance program;
- (3) During an emergency. (NOTE: When the employee has been exposed to methylene chloride in emergency situations, the content of emergency medical surveillance is discussed in 29 CFR 1910.)

Consider adding baseline PFTs and end-shift carboxyhemoglobin (recommended by OSHA in Appendix B, but not required by the standard).

End of shift carboxyhemoglobin may be determined periodically, and any level above 3% for non-smokers and above 10% for smokers should prompt an investigation of the worker and his/her workplace.

REFERENCES:

1. [29 CFR 1910.1052](#)
2. [29 CFR 1926.1152](#)

REVIEWED: FEB 2006, CDR Fran Litow

4,4'-METHYLENEDIANILINE (MDA)

213

STRESSOR(S) IN THIS PROGRAM:		NIOSH #	CAS #
4,4'-diaminodiphenylmethane		BY5425000	101-77-9
Program Frequency			Annual
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Past work exposure to MDA or other toxic substances	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Use of barbiturates	Yes	Annual	Yes
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Problems with urination/blood in urine	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Impotence or sexual dysfunction	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Work history of:			
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes
Exposure to carcinogens	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Serum chemistry:			

EXAM ELEMENT	BASE	PERI	TERM
Liver profile to include: SGOT (AST), Total Bilirubin, alkaline phosphatase, alt BUN and creatinine	Yes	Annual	Yes
Urinalysis: Routine: Urinalysis without microscopic	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination: Vital signs	Yes	Annual	Yes
Special attention in examination to:			
HEENT	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Abdomen	Yes	Annual	Yes
Genitourinary tract	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

Examinations are required for employees exposed to methylenedianiline in an emergency. Refer to [29 CFR 1910.1050, Appendix C](#).

(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD S&p_id=10084).

The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation for the purpose of medical removal or restriction. (http://www.OSHA-sl.gov/OshStd_data/1910_1050.html).

A Physician's/provider's Written Opinion can be found in [C11.2, Physician's/Provider's Written Opinion Samples](#) of this manual.

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.1050](#)

2. Aitio, Antero, M.D., Ph.D., Biologic Monitoring, p 178-179;
3. Cocker, J., Assessment of occupational exposure to 4,4'-diaminodiphenylmethane (methylenedianiline) by gas chromatography-mass spectrometry analysis of urine, *British Journal of Industrial Medicine*, 1986;43:620-625;
4. Hathaway, Gloria J. Ph.D., and J.P. Hughes, M.D., *Supplements to Chemical Hazards of the Workplace*, 2nd ed., Volume 1, Number 5.

REVIEWED: FEB 2006, CDR Fran Litow, MC, USN

ALPHA-NAPHTHYLAMINE**170**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
alpha-naphthylamine	QM1400000	134-32-7	
Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Decreased immunity	Yes	Annual	Yes
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes
Shortness of breath	Yes	Annual	Yes
Problems with urination/blood in urine	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Impotence or sexual dysfunction	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Family history of:			
Genetic disease (including children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.1003](#)
2. 29 CFR 1926.1103
3. Occupational Safety and Health Guidelines for Chemical Hazards, DHHS (NIOSH) Pub. No. 89-104, Supplement II-OHG 1988;
4. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Supplement 7, 1987. Former standard 29 CFR 1910.1004.

REVIEWED: FEB 2006, Gail San Juan, NP.

BETA-NAPHTHYLAMINE**171**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
beta-naphthylamine	QM2100000	91-59-8	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Decreased immunity	Yes	Annual	Yes
Problems with urination/blood in urine	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Impotence or sexual dysfunction	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Family history of:			
Genetic disease (including children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.1003](#)
2. Former standard 29 CFR 1910.1009
3. 29 CFR 1910.1103

REVIEWED: FEB 2006, Gail San Juan, NP.

NICKEL CARBONYL**173**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
nickel carbonyl	QR6300000	13463-39-3	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Work history of:			
Exposure to respiratory irritants	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Nasal mucosa (septal perforation)	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:**PROVIDER COMMENTS:**

Periodic urine nickel measurement has not been correlated with chronic health outcomes; however, urine nickel evaluation may assist the provider in determining if a worker with mild symptoms of nickel carbonyl toxicity would benefit from chelation therapy. Chelation therapy for workers with moderate or severe symptoms of nickel carbonyl toxicity is based on history and should not be delayed awaiting laboratory determination of urine nickel levels.

REFERENCES:

1. NIOSH-OSHA, Occupational Guideline for Nickel Carbonyl, Washington, DC: DHHS/DOL; 1978: 1-5;
2. [NIOSH pocket guide to Chemical Hazards: Nickel Carbonyl](#)
3. [OSHA Chemical Sampling Information: Nickel Carbonyl](#)
4. National Research Council, Nickel: Medical and Biologic Effects of Environmental Pollutants, Washington, DC: National Academy of Sciences: 1975; 97-128.

REVISED: FEB 2006, Gail San Juan, NP

NICKEL (INORGANIC)

172

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
nickel (metal)	QR5950000	7440-02-0
nickel (soluble compounds)	QR5950000	7440-02-0
nickel carbonate	QR6240000	65485-96-1
nickel II hydroxide	QR7040000	12054-48-7
nickel II oxide	QR8400000	1913-99-1
nickel subsulfide	OR9800000	12035-72-2

Program Frequency

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs)	Yes	Annual	Yes
Work history of:			
Exposure to skin irritants	Yes	Annual	Yes
Exposure to respiratory irritants	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Comments on laboratory results:	Yes	No	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Nasal mucosa (septal perforation)	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH-OSHA, Occupational Guidelines for Nickel Metal and Soluble Nickel Compounds, Washington, DC. DHHS/DOL: 1978: 1-7.
2. National Research Council, Nickel: Medical and Biologic Effects of Environmental Pollutants, Washington, DC: National Academy of Sciences: 1975; 97-128.

REVISED: FEB 2006, Gail San Juan, NP

4-NITROBIPHENYL**175**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
4-nitrobiphenyl	DV5600000	92-93-3	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Problems with urination/blood in urine	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Family history of:			
Genetic disease (including children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Liver profile to include:			
SGOT (AST), total bilirubin, alk phos, alt	Yes	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

1. 4-nitrobiphenyl is no longer manufactured or used in the United States. However, it is one of the original OSHA 13 carcinogens.
2. NIOSH (1988) recommended medical surveillance includes evaluation of liver function and integrity. The basis of the NIOSH recommendation is not given. It is recommended that review and assessment of hepatic function be included.
3. As one of the OSHA 13 carcinogens, 29 CFR 1910.1003 applies. In accordance with 1910.1003(d)(2)(iii), any worker involved in exposure incidents for all OSHA-regulated carcinogens must have a special medical surveillance annotation noted by a physician within 24 hours of exposure. A report of the medical surveillance and any treatment shall be included in the incident report, in accordance with paragraph (f)(2) of this section of 29 CFR.

REFERENCES:

1. [29 CFR 1910.1003](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10007)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10007)
2. [29 CFR 1926.1103](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10875)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10875)

PROGRAM REVIEWED: April 2007, Mari Pohlhaus, NP

NITROGEN OXIDES**174**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
nitrogen dioxide	QW9800000	10102-44-0	
nitric oxide	QX0525000	10102-43-9	
also see nitrous oxide program #108			
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Eye irritation	Yes	Annual	No
Chest pain, angina, heart attack	Yes	Annual	No
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Cardiovascular system	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Eyes	Yes	Annual	No
Teeth (acid erosion)	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

1. Community studies have demonstrated that exposure to oxides of nitrogen may aggravate existing pulmonary conditions or increase the number of acute respiratory diseases. The level of physical activity during exposure increases the total uptake and alters the distribution of inhaled NO₂. Additional questioning of frequency of respiratory infections and effects of level of activity during work exposure may be commented on in the patient note.
2. Tooth erosion would likely occur at levels far above the OEL and would not be a sensitive indicator of exposure. Effects on the mucosa (irritation) at levels near the current OSHA PEL are documented and should be considered as an alternative focus for the examination.
3. This Program requires a pre-placement and annual (or periodic) examination, but do not specially require a termination examination.

REFERENCES:

NIOSH Criteria for a Recommended Standard. [Occupational Exposure to Nitric Acid, DHHS Pub. No. 76-141 \(http://www.cdc.gov/niosh/76-141.html\)](http://www.cdc.gov/niosh/76-141.html).

REVISED: FEB 2006, COL Tim Mallon and COL David Louis

NITROGLYCERINE**176**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
nitroglycerin	QX2100000	55-63-0	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Use of nitrate medication (nitroglycerine)	Yes	Annual	No
Use of medication to treat erectile dysfunction (ED)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Chest pain, angina, heart attack	Yes	Annual	No
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No
Cardiovascular or circulatory condition or disease	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Migraine headache	Yes	Annual	No
Vibration white finger disease	Yes	Annual	No
Work history:			
Exposure to other explosives or propellants	Yes	Annual	No
Family history of:			
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Cardiology:			
Electrocardiogram	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Cardiovascular system	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Peripheral vascular system (Raynaud's)	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc.)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

1. Recommend asking about “sildenafil (Viagra) and other agents used to treat erectile dysfunction” on medication list. Phosphodiesterase inhibitors are contraindicated with use of medicinal NTG due to the increased hypotensive effect.
2. Headaches associated with organic nitrates classically begin as mild frontal headaches and become progressively worse and throbbing in nature. These H/As frequently disappear with further exposure as tolerance develops and recur following a period where there is no exposure (Monday morning).
3. Palpitations, nausea, and feeling of heat in face/upper extremities are frequently reported worker complaints associated with excessive exposure to NTG.
4. The formation of methemoglobinemia has been reported in association with high doses of NTG therapy or high dose occupational exposure; it is rare at conventional doses of NTG. But, this may be clinically significant following large exposures or in individuals with a methHb reductase deficiency or a congenital methHb variant. In case of exposure to high dose NTG, arterial blood gases would be drawn to determine MetHb levels.

REFERENCES:

REVISED: FEB 2006, COL Mallon and COL Louis

2-NITROPROPANE**211**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
2-nitropropane	T25250000	79-46-9	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Cough (dry or productive)	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Work history of:			
Exposure to respiratory irritants	Yes	Annual	Yes
Exposure to carcinogens	Yes	Annual	Yes
Family history of:			
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Yes	Yes
Urinalysis without microscopic	Yes	Yes	Yes
Radiology:			
Chest x-ray (PA)	Yes	Yes	Yes
Spirometry:			
Spirometry (FEV1, FVC, FEV1/FVC)	Yes	Yes	Yes
Vision screen (visual acuity)	Yes	Yes	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Special attention in examination to:			
CNS	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Kidney/renal system	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

1. For the OSHA 13 named suspect carcinogens regulated under 29 CFR 1910.1003, a physical examination must be performed on exposed individuals at least annually. Although 2-NP is NOT included in the OSHA 13, aspects of that exam will be incorporated into this exam as 2-NP is considered a "Possible Human Carcinogen".
2. NIOSH recommends that the medical evaluation "concentrate on the eyes, skin, liver, kidneys, and nervous and respiratory systems". It is recommended that PFT be done as an annual study for this stressor. NIOSH 1988 also adds a periodic CXR to the assessment. A CXR should be done periodically.
3. It is recommended that the addition of specific review of, and assessing function of the eyes (external examination and visual acuity), skin (condition and lesions), and kidneys (routine urinalysis), as well as respiratory tract (PFT) and liver (complete LFTs), be considered for inclusion in the baseline, monitoring, and termination examinations.

REFERENCES:

<http://www.cdc.gov/niosh/nmam/pdfs/2528.pdf>

REVISED: FEB 2006, COL Mallon and COL Louis.

N-NITROSODIMETHYLAMINE**177**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
n-nitrosodimethylamine	IQ0525000	62-75-9	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Problems with urination/blood in urine	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Family history of:			
Genetic disease (including children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Yes	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Kidney/renal system	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

1. N-nitrosodimethylamine is one of the OSHA thirteen "Suspect Human Carcinogens".
2. NIOSH recommends the medical evaluation "concentrate on the liver, kidneys, and respiratory system including standardized questionnaires and tests of lung function". The literature is variable on pulmonary effects, but it is suggested that PFT be done.

REFERENCES:

1. [29 CFR 1910.1003](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10007&p_text_version=FALSE)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10007&p_text_version=FALSE)
2. [29 CFR 1926.1103](http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10875)
(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10875).

REVIEWED: FEB 2006, COL Tim Mallon and COL David Louis.

ORGANOTIN COMPOUNDS**180**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
tin (organic compounds)		
tributyltin oxide	JN8750000	56-35-9
methyl tin mercaptide		
tributyltin benzoate	WH6710000	4342-36-3
dibutyltin dilaurate	WH7000000	77-58-7
tributyltin fluoride	WH8275000	1983-10-4
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung or resp disease (COPD, bronchitis, pneumonitis)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Nausea or vomiting	Yes	Annual	No
Change or loss of vision	Yes	Annual	No
Eye irritation	Yes	Annual	No
Liver disease	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Hematology:			
CBC	Yes	Yes	No
Differential WBC count	Yes	Yes	No
Serum chemistry:			
Liver profile to include:			

EXAM ELEMENT	BASE	PERI	TERM
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Yes	No
Urinalysis without microscopic	Yes	Yes	No
Spirometry:			
Spirometry (FEV1, FVC, FEV1/FVC)	Yes	No	No
Optometry:			
Vision screen (visual acuity)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Kidney	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

1. Visual changes and disturbances associated with exposure to airborne organotin compounds are manifested as irritation and/or blurring of vision.
2. NIOSH and the EPA consider the kidney (urinary tract) and blood, in addition to the CNS, liver, skin/eyes as target organs. Recommend urinalysis and CBC on all exams as both tests reveal hemolysis.
3. It is recommended that the CNS-directed examination should include assessment of psychological (behavioral) aspects during the examination.
4. One clinical case report revealed hepatomegaly and tenderness without elevation in liver enzymes following exposure to an organotin compound. It is recommended that a complete laboratory assessment of liver function be made using a liver panel.
5. The EPA has based their exposure standards and minimal risk levels (MRLs) on immunological criteria from animal studies. The inclusion of a CBC with differential can screen and assess this aspect.

REFERENCES:

[NIOSH Criteria Documents: Criteria for a Recommended Standard: Occupational Exposure to Organotin Compounds, DHHS Pub. No. 77-115 \(http://www.cdc.gov/niosh/77-115.html\)](http://www.cdc.gov/niosh/77-115.html).

REVISED: FEB 2006, COL Tim Mallon and COL David Louis

OTTO FUEL II AND OTHER ALKYL NITRATE PROPELLANTS AND EXPLOSIVES
186

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
propylene glycol dinitrate	TY6300000	6423-43-4
ethylene glycol dinitrate	KW5600000	628-96-6
ethylhexyl nitrate		27247-96-7
		Annual

Program Frequency

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Use of nitrate medication (nitroglycerine)	Yes	Annual	No
Use of medication to treat erectile dysfunction (ED)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Change or loss of vision	Yes	Annual	No
Chest pain, angina, heart attack	Yes	Annual	No
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No
Migraine headache	Yes	Annual	No
Family history of:			
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	No
Serum chemistry:			
BUN and creatinine	Yes	Annual	No
Urinalysis without microscopic	Yes	Annual	No
Cardiology:			
Electrocardiogram	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Optometry:			
Vision screen (visual acuity)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Cardiovascular system	Yes	Annual	No
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:**PROVIDER COMMENTS:**

1. The NIOSH criteria document of 1978 combines nitroglycerine (NG) and ethylene glycol dinitrate (EGDN) and uses the same criteria for exposure to either or both. The medical surveillance criteria are generally the same.
2. This program category includes OFII (a mixture containing PGDN), as well as other organic nitrate propellants. The medical surveillance is therefore based upon the "pooled toxic effects" of the general class of these chemicals. The current assessment guidance may not be totally applicable to all chemicals in the class, but this is still a good approach and the best available with current data.
3. Headaches typically associated with organic nitrates classically begin as mild frontal headaches and become progressively worse and throbbing in nature, and frequently disappear with further exposure as tolerance develops.
4. Emphasis of eye/vision to include sclera/mucosa and evaluation of extraocular eye movements. Although not adopted, the OSHA revised 1988 rulemaking for the adoption of "new PELs" specifically lists PGDN as a neurotoxicant. Include evaluation of extraocular eye movements in assessment of eye and vision testing, or visual evoked response (VER) as screening tests. In addition to seeing/detecting conjunctival irritation, these tests may detect CNS effects noted in the literature.
5. Animal data indicate that renal pathology can also occur from exposure to various organic nitrates. In light of the combined group approach for this program stressor, urinalysis and renal testing can address this aspect.

REFERENCES:

1. NAVMEDCOMINST 6270.1, 19 MAR 85, HEALTH HAZARDS OF OTTO FUEL II;
2. CHIEF BUMED ltr 5100, Ser 242/4U763715 of 2 Feb 94;

3. Jones RA., Strickland, JA., Siegel J. Toxicity of propylene 1,2-dinitrate in experimental animals, *Toxicology and Applied Pharmacology*, 1972;22:128-137;
4. NAVENVIRHLTHCEN ltr 6260 Ser 3213mt/04449 of 27 Apr 90.

REVISED: FEB 2006, COL Mallon and COL Louis

POLYCHLORINATED BIPHENYLS (PCB)**184**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
chlorodiphenyl (42% chlorine)	TQ1356000	53469-21-9
chlorodiphenyl (54% chlorine)	DV2063000	27323-8-8
aroclor 1260	TQ1362000	11906-82-5
aroclor 1254	TQ1360000	11097-69-1
kanechlor 500	DY8100000	25429-29-2
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Hepatitis or jaundice	Yes	Annual	No
Liver disease	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Annual	No
GGT	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Liver	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

Placement on medical surveillance program is for personnel exposed to PCB's above the medical surveillance action level. These levels are based on airborne concentrations of PCB's. There is no current required medical surveillance based on skin contact alone but those workers with reasonable possibility of regular skin contact should also be considered for medical surveillance.

PROVIDER'S COMMENTS:

1. Recommend directing examination more specifically to visible manifestations of the relatively rare chloracne: comedones and straw-colored cysts around the eyes, behind the ears, and on the genitalia, back, and shoulders; as well as, hypertrichosis; hyperpigmentation; brown discoloration of the nails; and conjunctivitis and eye discharge.
2. IAW with early NIOSH recommendations, in conjunction with the reproductive health concerns question in the exam, discuss child-bearing and nursing for the purpose of counseling.
3. Although correlations between serum triglycerides or cholesterol levels and serum PCBs in PCB-exposed workers have been reported, these appear to be a high dose phenomenon.
4. Do a complete liver function panel (AST (SGOT), ALT (SGPT), GGT, DB, TB, and PT) for baseline and annual assessments. A comparison of the AST level and the ALT level is often made in the assessment of etiology. PCBs are known inducers of microsomal enzymes; the GGT is a sensitive, non-specific indicator of this effect. Studies suggest a threshold of 100 ppb in serum for a phenobarbital-type induction in humans (Brown JF, 1994).
4. Post-exposure blood PCB level should be considered. A baseline may not be necessary for all personnel as it is anticipated that there are relatively few current workers (HAZMAT personnel; mishap exposure) who remain occupationally exposed to PCBs above the action level. The majority of medical assessment and surveillance requests will be post-exposure following an incident. Acute and follow-up blood PCB levels can be used to evaluate the exposure in retrospect as the exact congener would not necessarily be known for pre-exposure (baseline) screening.

REFERENCES:

1. NIOSH criteria for a recommended standard...[Occupational Exposure to Polychlorinated Biphenyls, DHHS Pub. No. 77-225 \(http://www.cdc.gov/niosh/77-225.html\)](http://www.cdc.gov/niosh/77-225.html));
2. NIOSH Current Intelligence Bulletin 45, Feb 24, 1986;
3. NAVENVIRHLTHCEN letter 6263.1 Ser 09nd/11643m 30 Nov 89, ADVISORY ON POLYCHLORINATED BIPHENYLS (PCBs).

REVISED: FEB 2006, COL Mallon and COL Louis

BETA-PROPIOLACTONE**185**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
beta-propiolactone	RQ7350000	57-57-8	
Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Skin disease	Yes	Annual	Yes
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Decreased immunity	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Current pregnancy (females only)	Yes	Annual	Yes
Work history of:			
Exposure to carcinogens	Yes	Annual	Yes
Family history of:			
Genetic disease (include children)	Yes	Annual	Yes
Cancer (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory			
SGOT (AST), total bili, alk phos, alt	Yes	Annual	Yes
Urinalysis	Yes	Annual	Yes
Spirometry	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Kidney/renal system	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Liver	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

1. BETA-PROPIOLACTONE is one of the OSHA thirteen "Suspect Human Carcinogens".
2. Recommend commenting on any past or chronic liver disease, immuno-compromised state, treatment with steroids or cytotoxic agents and pregnancy status to medical history → counseling.

REFERENCES: 29 CFR 1910.1003

(http://www.OSHA.gov/pls/OSHAweb/owadisp.show_document?p_table=STANDARD&p_id=10007&p_text_version=FALSE).

2. 29 CFR 1926.1103.
3. Former standard 29 CFR 1910.1013.

REVIEWED: FEB 2006, COL Mallon and COL Louis

SILICA (CRYSTALLINE)**187**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
silica crystalline cristobalite	VV7325000	14464-46-1
silica crystalline quartz	VV7330000	14808-60-7
silica crystalline tridymite	VV7335000	15468-32-3
silica crystalline tripoli	VV7336000	1317-95-9
silica amorphous fused	VV7320000	60676-86-0

Program Frequency

Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Autoimmune disease or condition	Yes	Annual	No
Lung or resp disease (COPD, bronchitis, pneumonitis)	Yes	Annual	No
Tuberculosis	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Kidney disease	Yes	Annual	No
Work history of:			
Exposure to dusts (coal, blast, grit, sand, nuisance)	Yes	Annual	No
Exposure to asbestos	Yes	Annual	No
Exposure to silica or sand	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Urinalysis	Yes	Annual	No
Additional lab tests:			
Tuberculosis screen	Yes	Annual	No
Radiology:			
Chest x-ray (PA)	Yes	Trienn	No
Spirometry:			

EXAM ELEMENT	BASE	PERI	TERM
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Special notations:			
Substance known human carcinogen	Yes	Annual	No
Counseling regarding combined effects of smoking and respirable crystalline silica (RCS) exposure	Yes	.annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Has patient completed an updated OSHA respiratory questionnaire	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

1. Respirable crystalline silica has been designated a carcinogen. In view of current concern for carcinogenicity, patients should be counseled regarding this carcinogenic effect.
2. Consider counseling on smoking cessation. If possible have patient initial and acknowledge statement.
3. Although it is assumed that currently exposed individuals will be in the Respiratory Protection Program, a question determining if the individual has completed an updated OSHA Respirator Medical Evaluation Questionnaire (Mandatory) as required under Appendix C to Sec. 1910.134 is recommended. The screening questions are much more extensive than contained in the entry for silica.
4. Recommend questions for screening for autoimmune conditions (rheumatoid arthritis, scleroderma, Sjogrens' syndrome, and lupus), as well as kidney diseases (nephritis and end-stage renal disease). A urinalysis can provide important renal function information. Evidence supporting these conditions with silica exposure (and with and without the presence of silicosis) are found in the recent literature.
5. The NIOSH ALERT of August 1992 recommends a chest X-ray every three years classified according to the 1980 International Labour Office (ILO) Classification of Radiographs of the Pneumoconioses. Some sources have recommended that the frequency be based upon years and intensity of exposure.
6. NIOSH lists the eye and respiratory system as target organs. Recommend including specific evaluation of the cornea for physical damage.

REFERENCES:

NIOSH Criteria for a Recommended Standard. [Occupational Exposure to Crystalline Silica](http://www.cdc.gov/niosh/75-120.html),
DHHS Pub. No. 75-120 (<http://www.cdc.gov/niosh/75-120.html>).

REVISED: FEB 2006, COL Mallon and COL Louis

STYRENE

189

STRESSOR(S) IN THIS PROGRAM: styrene	NIOSH # WL3675000	CAS # 100-42-5 Annual		
		Program Frequency		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more (beer, wine, liquor)drinks per week	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Blood diseases (anemia)	Yes	Annual	No	
Skin disease	Yes	Annual	No	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No	
Headache, dizziness, light-headedness, weakness	Yes	Annual	No	
Eye irritation	Yes	Annual	No	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No	
Depression, diff concentrating, excessive anxiety	Yes	Annual	No	
Personality change	Yes	Annual	No	
Work history of:				
Exposure to skin irritants	Yes	Annual	No	
Exposure to respiratory irritants	Yes	Annual	No	
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Spirometry:				
Spirometry (FEV1, FVC, FEV1/FVC)	Yes	No	No	
Comments on laboratory results:	Yes	No	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				
Central nervous system	Yes	Annual	No	
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

NIOSH Criteria for a Recommended Standard. Occupational Exposure to Styrene, DHEW Pub. No. 83-119.

PROGRAM REVISED 10/97.

SULFUR DIOXIDE**190**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
sulfur dioxide	WS4550000	7446-09-5	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more (beer, wine, liquor)drinks per week	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)			
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Lung or resp disease (COPD, bronchitis, pneumonitis)	Yes	Annual	No
Eye irritation	Yes	Annual	No
Tooth or gum disease	Yes	Annual	No
Work history of:			
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FEV1, FVC, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	No	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Teeth (acid erosion)	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH Criteria for a Recommended Standard. Occupational Exposure to Sulfur Dioxide, 1974, DHHS (NIOSH) Publication No. 74-111, <http://www.cdc.gov/niosh/74-111.html>
2. NIOSH Publication No. 2005-151, NIOSH Pocket Guide to Chemical Hazards, updated Sept 2005, <http://www.cdc.gov/niosh/npg/npgd0575.html>
3. NIOSH, Sulfur Dioxide, <http://www.cdc.gov/niosh/nmed/nmed0215.html>
4. Agency for Toxic Substances and Disease Registry (ATSDR) fact sheet on sulfur dioxide: <http://www.atsdr.cdc.gov/tfacts116.html>

REVISED: NOV 2005, Capt. Paul Eagan

ORTHO-TOLIDINE**214**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
o-tolidine	DD1225000	119-93-7		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Problems with urination/blood in urine	Yes	Annual	Yes	
Work history of:				
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes	
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to carcinogens	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes	
Other appropriate examination (specify)	Yes	Annual	Yes	
Comments on physical examination:	Yes	Annual	Yes	
Special notations:				
Substance(s) suspected human carcinogen	Yes	Annual	Yes	
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes	
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes	
Recommendations:	Yes	Annual	Yes	

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH Criteria for a Recommended Standard. Occupational exposure to o-Tolidine, DHEW (NIOSH) Pub. No. 78-179;
2. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices, Fifth Edition, Cincinnati: ACGIH, Inc. 1986. 577.

PROGRAM REVISED 10/97.

ORTHO-TOLUIDINE**194**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
o-toluidine	XU2975000	95-53-4		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Problems with urination/blood in urine	Yes	Annual	Yes	
Work history of:				
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes	
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to carcinogens	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Serum chemistry:				
Liver profile to include:				
SGOT (AST), total bilirubin, alkaline phosphatase	Yes	Annual	Yes	
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Physical examination:				
Vital signs	Yes	Annual	Yes	
Special attention in examination to:				
Liver	Yes	Annual	Yes	
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes	
Other appropriate examination (specify)	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

REFERENCES:

1. FEDERAL REGISTER FR54:12 29 CFR PART 1910 Air Contaminates, Final Rule 2689-90, 19 Jan 89;
2. Occupational Health Guidelines for O-toluidine, DHHS (NIOSH) Publication 81-123.

PROGRAM REVISED 10/97.

1,1,2,2-TETRACHLOROETHANE**191**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
1,1,2,2-tetrachloroethane	KI8575000	79-34-5	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more (beer, wine, liquor) drinks per week	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Nausea or vomiting	Yes	Annual	No
Weight loss	Yes	Annual	No
Tremors	Yes	Annual	No
Liver disease	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Depression, difficulty concentrating, excessive anxiety	Yes	Annual	No
Work history of:			
Exposure to respiratory irritants	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	No
SGOT (AST)	*	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Liver	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc.)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

NIOSH Criteria for a Recommended Standard. Occupational Exposure to 1,1,2,2-Tetrachloroethane, DHEW Pub. No. 77-121.

PROGRAM REVISED 10/97.

TETRACHLOROETHYLENE (PERCHLOROETHYLENE)**192**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
perchloroethylene	KX3850000	127-18-4	
Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Hepatitis or jaundice	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Nausea or vomiting	Yes	Annual	No
Tremors	Yes	Annual	No
Change or loss of vision	Yes	Annual	No
Eye irritation	Yes	Annual	No
Liver disease	Yes	Annual	No
Infertility or miscarriage (self or spouse)	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Depression, difficulty concentrating, excessive Anxiety	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	No
BUN and creatinine	Yes	Annual	No
SGOT (AST)	*	Annual	No
Comments on laboratory results:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH Criteria for a Recommended Standard. Occupational Exposure to Tetrachloroethylene, DHEW Pub. No. 76-185;
2. Brown DP, Kaplan SD, Retrospective Cohort Mortality Study of Dry Cleaner Workers Using Perchloroethylene, Journal of Occupational Medicine 29:53551, 1987;
3. Federal Register FR54:2686-91 29 CFR Part 1910 Air Contaminants, Final rule 19 JAN 89;
4. Key MM et al. (ed.) Occupational Diseases, A Guide to their Recognition, NIOSH 1977, 213-4,448.

PROGRAM REVISED 10/97.

TETRYL**209**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
tetryl	BY6300000	479-45-8	
Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Blood diseases (anemia)	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Eye irritation	Yes	Annual	No
Liver disease	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Family history of:			
Blood diseases (anemia)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	No
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	No
SGOT (AST)	*	Annual	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

PROGRAM REVISED 10/97.

TOLUENE

195

STRESSOR(S) IN THIS PROGRAM:		NIOSH #	CAS #	
toluene		XS5250000	108-88-3	
	Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Allergies (asthma, hay fever, eczema)	Yes	Annual	No	
Skin disease	Yes	Annual	No	
Headache, dizziness, light-headedness, weakness	Yes	Annual	No	
Nausea or vomiting	Yes	Annual	No	
Eye irritation	Yes	Annual	No	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No	
Migraine headache	Yes	Annual	No	
Depression, diff concentrating, excessive anxiety	Yes	Annual	No	
Work history of:				
Exposure to skin irritants	Yes	Annual	No	
Exposure to respiratory irritants	Yes	Annual	No	
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				
Central nervous system	Yes	Annual	No	
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No	
Eyes	Yes	Annual	No	
Mucous membranes	Yes	Annual	No	
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No	
Other appropriate examination (specify)	Yes	Annual	No	
Comments on physical examination:	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH Criteria for a Recommended Standard. Occupational Exposure to Toluene, DHEW Pub. No. (HSM) 7311023;
2. Federal Register FR54:2431-32 19 JAN 89.

PROGRAM REVISED 10/97.

1,1,1-TRICHLOROETHANE (METHYL CHLOROFORM)**197**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
methylchloroform	KJ2975000	71-55-6	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Hepatitis or jaundice	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Eye irritation	Yes	Annual	No
Chest pain, angina, heart attack	Yes	Annual	No
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No
Liver disease	Yes	Annual	No
Problems with balance, coordination, numbness, Tingling, weakness	Yes	Annual	No
Depression, diff concentrating, excessive anxiety	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Family history of:			
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	No
SGOT (AST)	*	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Urinalysis			
Routine:			
Urinalysis with microscopic	Yes	No	No
Cardiology:			
Electrocardiogram	Yes	No	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Cardiovascular system	Yes	Annual	No
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH criteria for a recommended standard...Occupational Exposure to 1,1,1-Trichloroethane (Methyl Chloroform) DHEW Pub. No. 76-184;
2. Federal Register FR54:2427 29 CFR Part 1910 Air Contaminants, Final Rule 19 JAN 89;
3. Clayton GD and Clayton FE (ed) Patty's Industrial Hygiene and Toxicology, 3rd Revised Ed. New York: John Wiley & Sons, Inc. 1981, 3502-3510;
4. Key MM et al. (ed) Occupational Diseases, A Guide to their Recognition NIOSH, 1977, 215-216.

PROGRAM REVISED 10/97.

TRICHLOROETHYLENE**198**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #		
trichloroethylene	KX4550000	79-01-6		
	Program Frequency	Annual		
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Hepatitis or jaundice	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes	
Nausea or vomiting	Yes	Annual	Yes	
Chest pain, angina, heart attack	Yes	Annual	Yes	
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes	
Work history of:				
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to respiratory irritants	Yes	Annual	Yes	
Exposure to carcinogens	Yes	Annual	Yes	
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	Yes	
Family history of:				
Cancers (leukemia, tumors)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				

EXAM ELEMENT	BASE	PERI	TERM
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatase	Yes	No	Yes
SGOT (AST)	*	Annual	Yes
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	Yes
Cardiology:			
Electrocardiogram	Yes	No	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH Criteria for a Recommended Standard: Occupational Exposure to Trichloroethylene 1973 DHHS (NIOSH) Publication No. 73-11025: <http://www.cdc.gov/niosh/73-11025.html>
2. NIOSH Current Intelligence Bulletin 20; 3. Federal Register R54:2432-34 29CFR Part 1910 Air Contaminants, Final Rule 19 JAN 89.

REVISED: FEB 2006, CDR Ken Lankin, MC, USN.

VINYL CHLORIDE ANY EXPOSURE (CHLOROETHENE)

204

STRESSOR(S) IN THIS PROGRAM:		NIOSH #	CAS #	
vinyl chloride		KU9625000	75-01-4	
Program Frequency			Annual	
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Blood transfusions	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Peripheral vascular disease	Yes	Annual	Yes	
Hepatitis or jaundice	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes	
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes	
Weight loss	Yes	Annual	Yes	
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	Yes	
Liver disease	Yes	Annual	Yes	
Kidney disease	Yes	Annual	Yes	
Work history of:				
10 or more years since first exposure to vinyl Chloride	Yes	Annual	Yes	
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Serum chemistry:				
Liver profile to include:				
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Annual	Yes	
BUN and creatinine	Yes	Annual	Yes	
GGT	Yes	Annual	Yes	

EXAM ELEMENT	BASE	PERI	TERM
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Peripheral vascular system (Raynaud's)	Yes	Annual	Yes
Abdomen	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Spleen	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:

This program is for anyone employed in vinyl chloride or polyvinyl chloride manufacturing.

Abnormal laboratory test results should be repeated as soon as practicable, preferably within 3-4 weeks. If tests remain abnormal, consideration should be given to removal of the employee from contact with vinyl chloride, while a more comprehensive examination is made.

Review of the medical literature since date of last revision, March 2000, does not reveal any new information with respect to recommendations and procedures for medical surveillance in those exposed to vinyl chloride as part of their occupational duties. There has been some work looking at acute exposure monitoring using urinary thiodiglycolic acid levels¹ but this has not been incorporated into routine monitoring protocols.

REFERENCES:

1. [29 CFR 1910.1017](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10021&p_text_version=FALSE)
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10021&p_text_version=FALSE,
2. [29 CFR 1926.1117](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10889) (OSHA construction standard for vinyl chloride exposure)
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10889
3. [29 CFR 1915.1017](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10315) (OSHA shipyard standard for vinyl chloride exposure)
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10315

4. [NIOSH pocket guide to Chemical Hazards,](http://www.cdc.gov/niosh/npg/npgd0658.html)
<http://www.cdc.gov/niosh/npg/npgd0658.html>
5. Vinyl Chloride Toxicity, In: Case Studies in Environmental Medicine, Agency for Toxic Substances and Disease Registry, Scandinavian Journal Work Environmental Health 1988;14:61-78. 13.
6. Cheng, TJ, Huang, YF, Ma, YC, Urinary thiodiglycolic acid levels for vinyl chloride workers, J. Occup Environ Med, 2001 Nov; 43 (11): 934-8.

REVIEWED: NOV 2005, CAPT Paul Eagan

VINYL CHLORIDE 10+ YEARS EXPOSURE (CHLOROETHENE)

203

STRESSOR(S) IN THIS PROGRAM:		NIOSH #	CAS #	
vinyl chloride		KU9625000	75-01-4	
Program Frequency			Semi-Annual	
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Semi-A	Yes	
Major illness or injury	Yes	Semi-A	Yes	
Hospitalization or surgery	Yes	Semi-A	Yes	
Cancer	Yes	Semi-A	Yes	
Back injury	Yes	Semi-A	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Semi-A	Yes	
Have you ever smoked	Yes	Semi-A	Yes	
Do you currently smoke (packs/day)	Yes	Semi-A	Yes	
Heart disease, high blood pressure, or stroke	Yes	Semi-A	Yes	
Current medication use (prescription or OTC)	Yes	Semi-A	Yes	
Medication allergies	Yes	Semi-A	Yes	
Any reproductive health concerns	Yes	Semi-A	Yes	
Blood transfusions	Yes	Semi-A	Yes	
Skin disease	Yes	Semi-A	Yes	
Peripheral vascular disease	Yes	Semi-A	Yes	
Hepatitis or jaundice	Yes	Semi-A	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Semi-A	Yes	
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Semi-A	Yes	
Headache, dizziness, light-headedness, weakness	Yes	Semi-A	Yes	
Weight loss	Yes	Semi-A	Yes	
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Semi-A	Yes	
Liver disease	Yes	Semi-A	Yes	
Kidney disease	Yes	Semi-A	Yes	
Work history of:				
10 or more years since first exposure to vinyl Chloride	Yes	Semi-A	Yes	
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Semi-A	Yes	
Comments on medical history:	Yes	Semi-A	Yes	
Laboratory:				
Serum chemistry:				
Liver profile to include:				
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	Semi-A	Yes	
BUN and creatinine	Yes	Semi-A	Yes	

EXAM ELEMENT	BASE	PERI	TERM
GGT	Yes	Semi-A	Yes
Radiology:			
Chest x-ray (PA)	Yes	No	Yes
Comments on laboratory results:	Yes	Semi-A	Yes
Physical examination:			
Vital signs	Yes	Semi-A	Yes
Special attention in examination to:			
Central nervous system	Yes	Semi-A	Yes
Peripheral vascular system (Raynaud's)	Yes	Semi-A	Yes
Abdomen	Yes	Semi-A	Yes
Liver	Yes	Semi-A	Yes
Spleen	Yes	Semi-A	Yes
Respiratory system	Yes	Semi-A	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Semi-A	Yes
Other appropriate examination (specify)	Yes	Semi-A	Yes
Comments on physical examination:	Yes	Semi-A	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Semi-A	Yes
Physician's/provider's written opinion required	Yes	Semi-A	Yes
Is surveillance/PPE consistent with exposures	Yes	Semi-A	Yes
Are any abnormalities related to exposures/occupations	Yes	Semi-A	Yes
Recommendations:	Yes	Semi-A	Yes

PROGRAM DESCRIPTION:

This program is for anyone employed in vinyl chloride or polyvinyl chloride manufacturing.

Abnormal laboratory test results should be repeated as soon as practicable, preferably within 3-4 weeks. If tests remain abnormal, consideration should be given to removal of the employee from contact with vinyl chloride, while a more comprehensive examination is made.

Review of the medical literature since date of last revision, March 2000, does not reveal any new information with respect to recommendations and procedures for medical surveillance in those exposed to vinyl chloride as part of their occupational duties. There has been some work looking at acute exposure monitoring using urinary thiodiglycolic acid levels but this has not been incorporated into routine monitoring protocols.

REFERENCES:

1. [29 CFR 1910.1017](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10021&p_text_version=FALSE)
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10021&p_text_version=FALSE,
2. [29 CFR 1926.1117](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10889) (OSHA construction standard for vinyl chloride exposure)
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10889
3. [29 CFR 1915.1017](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10315) (OSHA shipyard standard for vinyl chloride exposure)
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10315

4. [NIOSH pocket guide to Chemical Hazards,](http://www.cdc.gov/niosh/npg/npgd0658.html)
<http://www.cdc.gov/niosh/npg/npgd0658.html>
5. Cheng, TJ, Huang, YF, Ma, YC, Urinary thiodiglycolic acid levels for monomer-exposed polyvinyl chloride workers, J. Occup Environ Med, 2001 Nov; 43 (11): 934-8.

REVIEWED: NOV 05, CAPT Paul Eagan

XYLENE**205**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
xylene (o-,m- and p- isomers)	ZE2100000	1330-20-7	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Hepatitis or jaundice	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Nausea or vomiting	Yes	Annual	No
Liver disease	Yes	Annual	No
Kidney disease	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Migraine headache	Yes	Annual	No
Depression, diff concentrating, excessive anxiety	Yes	Annual	No
Work history of:			
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	No
SGOT (AST)	*	Annual	No
Urinalysis:			
Routine:			

EXAM ELEMENT	BASE	PERI	TERM
Urinalysis with microscopic	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

PROGRAM DESCRIPTION:

REFERENCES:

1. Criteria for a Recommended Standard: Occupational Exposure to Trichloroethylene 1973
DHHS (NIOSH) Publication No. 75-168: <http://www.cdc.gov/niosh/75-168.html>
2. Key MM et al., (ed.) Occupational Diseases, A guide to Their Recognition, NIOSH, 1977, 243;
3. Federal Register FR 54:2477 29CFR 1910 Air Contaminants, Final Rule 19 JAN 89.

REVISED: FEB 2006, CDR Ken Lankin, MC, USN.

Chapter 5:

C5. Physical Stressors

C5.1. Introduction and Changes

Programs in this section which are based on Navy instructions have those references listed in the program description section. Instructions were current at the time this manual was prepared. However, it is incumbent on the individual user to ensure that current instructions are verified and used.

Individuals are placed on these programs based on recommendations from Industrial Hygiene and Safety or requirements by management.

Where there are stringent requirements for documentation using standard forms, those exams are not duplicated in this document.

All new tests are in bold letters.

The requirement for routine, periodic examinations for the sight conservation was removed from OPNAVINST 5100.23E and the program is removed from the Medical Matrix. The program still exists in PC Matrix for you to use on occasion when you do sight screening examinations.

C5.2. Physical Stressors

Cold

Heat

Noise

Noise Follow-up

Radiation - Ionizing

Radiation - Laser (Class III and IV)

Hand Arm Vibration

Whole Body Vibration

COLD**501****STRESSOR(S) IN THIS PROGRAM:**

cold

EXAM ELEMENT	Program Frequency		TERM
	BASE	PERI	
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Bienn	No
Major illness or injury	Yes	Bienn	No
Hospitalization or surgery	Yes	Bienn	No
Cancer	Yes	Bienn	No
Back injury	Yes	Bienn	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Bienn	No
Have you ever smoked	Yes	Bienn	No
Do you currently smoke (packs/day)	Yes	Bienn	No
Do you use smokeless tobacco	Yes	Bienn	No
Heart disease, high blood pressure, or stroke	Yes	Bienn	No
Current medication use (prescription or OTC)	Yes	Bienn	No
Medication allergies	Yes	Bienn	No
Any reproductive health concerns	Yes	Bienn	No
Blood diseases (anemia)	Yes	Bienn	No
Allergies (asthma, hay fever, eczema)	Yes	Bienn	No
Skin disease	Yes	Bienn	No
Peripheral vascular disease	Yes	Bienn	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Bienn	No
Cold injury (frostbite, chill, trench ft, hypothermia)	Yes	Bienn	No
Chest pain, angina, heart attack	Yes	Bienn	No
Repeated episodes of loss of or near loss of consciousness	Yes	Bienn	No
Thyroid disease (heat or cold intolerance)	Yes	Bienn	No
Diabetes or other endocrine gland disorder	Yes	Bienn	No
Mental/emotional illness	Yes	Bienn	No
Comments on medical history:	Yes	Bienn	No
Cardiology:			
Electrocardiogram	***	***	No
Comments on laboratory results:	Yes	Bienn	No
Physical examination:			
Vital signs	Yes	Bienn	No
Special attention in examination to:			
Cardiovascular system	Yes	Bienn	No
Peripheral vascular system (Raynaud's)	Yes	Bienn	No
Respiratory system	Yes	Bienn	No

EXAM ELEMENT	BASE	PERI	TERM
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Bienn	No
Thyroid	Yes	Bienn	No
Other appropriate examination (specify)	Yes	Bienn	No
Comments on physical examination:	Yes	Bienn	No
Is surveillance/PPE consistent with exposures	Yes	Bienn	No
Are any abnormalities related to exposures/occupations	Yes	Bienn	No
Recommendations:	Yes	Bienn	No

***An EKG may be indicated in workers when there are cardiovascular risk factors or other indications present.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

A worker should be entered on this program if exposed to temperatures below (-)1 degree Centigrade for ten or more days in a quarter or for more than 30 days a year.

The general nutrition status of the individual should be evaluated.

Use of the following medications should be included in the screening; nitrate medications, barbiturates, tranquilizers, vasoactive drugs, and diuretics.

The ACGIH handbook of Threshold Limit Values states: Employees should be excluded from work in cold at (-)1°C (30.2°F) or below if they are suffering from diseases or taking medication which interferes with normal body temperature regulation or reduces tolerance to work in cold environments. Workers who are routinely exposed to temperatures below (-)24°C (-11.2°F) with wind speeds less than five miles per hour, or air temperatures below (-)18°C (0°F) with wind speeds above five miles per hour, should be medically certified as suitable for such exposures.

Trauma sustained in freezing or subzero conditions requires special attention because an injured worker is predisposed to secondary cold injury. Special provision must be made to prevent hypothermia and secondary freezing of damaged tissues in addition to providing for first aid treatment.

REFERENCES:

1. Weiner, SC, Barrett JB, Trauma Management for Civilian and Military Physicians, WB Saunders, Philadelphia, 1986;
2. NAVMED P-5052-29 "COLD INJURY";
3. Threshold Limit Values and Biological Exposure Limits, Cincinnati, OH: American Conference of Government Industrial Hygienists; 1997.
4. [Cold Induced Injuries](#), Walter Reed Army Medical Center

PROGRAM REVISED 10/97.

HEAT**502**

STRESSOR(S) IN THIS PROGRAM:		NIOSH #		CAS #
Heat	Program Frequency			Annual
	EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
	Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
	Major illness or injury	Yes	Annual	No
	Hospitalization or surgery	Yes	Annual	No
	Cancer	Yes	Annual	No
	Back injury	Yes	Annual	No
	Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
	Have you ever smoked	Yes	Annual	No
	Do you currently smoke (packs/day)	Yes	Annual	No
	Heart disease, high blood pressure, or stroke	Yes	Annual	No
	Current medication use (prescription or OTC)	Yes	Annual	No
	Medication allergies	Yes	Annual	No
	Any reproductive health concerns	Yes	Annual	No
	Skin disease	Yes	Annual	No
	Heat injury (cramps, exhaustion, stroke)	Yes	Annual	No
	Exposure (acclimatization) to heat	Yes	Annual	No
	Chest pain, angina, heart attack	Yes	Annual	No
	Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No
	Kidney disease	Yes	Annual	No
	Current pregnancy (females only)	Yes	Annual	No
	Infertility or miscarriage (self or spouse)	Yes	Annual	No
	Thyroid disease (heat or cold intolerance)	Yes	Annual	No
	Diabetes or other endocrine gland disorder	Yes	Annual	No
	Mental/emotional illness	Yes	Annual	No
Work history of:				
	Exposure to skin irritants	Yes	Annual	No
	Comments on medical history:	Yes	Annual	No
Laboratory:				
Urinalysis:				
	Routine:			
	Urinalysis without microscopic	Yes	Annual	No
Cardiology:				
	Electrocardiogram	***	***	No
	Comments on laboratory results:	Yes	Annual	No
Physical examination:				
	Vital signs	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Required when positive history questions are obtained	Yes	Annual	No
Special attention in examination to:			
Cardiovascular system	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Skin, with regard to malignant & pre-malignant conditions	Yes	Annual	No
Thyroid	Yes	Annual	No
Obesity	Yes	Annual	No
Overall physical fitness	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

***EKG may be indicated in workers when there are cardiovascular risk factors or other indications present.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

In addition to use of anticholinergic drugs, individuals should be screened for use of other medications including; nitrate medications, tricyclic antidepressants, MAO inhibitors, amphetamines, diuretics and antihistamines.

REFERENCES:

1. NIOSH Criteria for a Recommended Standard: Occupational Exposure to Hot Environments, Revised Criteria, 1986, DHHS (NIOSH) Pub. No. 86-113;
2. OSHA Instruction TED 1.15, September 22, 1995, Section II: Chapter 4 Heat Stress;
3. Threshold Limit Values and Biological Exposure Limits, Cincinnati, OH: American Conference of Government Industrial Hygienists; 1997.
4. Working in Hot Environments – NIOSH publication <http://www.cdc.gov/niosh/hotenvt.html>
5. Protecting Workers in Hot Environments http://www.OSHA-slc.gov/OshDoc/Fact_data?FSNO95-16.html
6. Heat stress – OSHA Technical Manual, Section II – Chapter 4 http://www.OSHA-slc.gov/TechMan_data/11_4.html

PROGRAM REVISED 10/97.

NOISE

503

STRESSOR(S) IN THIS PROGRAM:		NIOSH #	CAS #	
noise	Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Ringing in the ear (tinnitus)	Yes	Annual	Yes	
Ruptured ear drum	Yes	Annual	Yes	
Loss or change in hearing	Yes	Annual	Yes	
Problem hearing conversations/people	Yes	Annual	Yes	
Recreational/non-occupational exposure to loud noise	Yes	Annual	Yes	
Work history of:				
Exposure to excessive noise	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory:				
Audiology:				
Audiogram	Yes	Annual	Yes	
Comments on laboratory results:	Yes	Annual	Yes	
Hearing conservation:				
Has baseline been reestablished due to PTS?	Yes	Annual	Yes	
High frequency average exceeds 45 db bilaterally?	Yes	Annual	Yes	
Ear plugs fitted and issued?	Yes	Annual	Yes	
Refer to audiologist or physician?	Yes	Annual	Yes	
Recommendations:	Yes	Annual	Yes	

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Conductive hearing loss must be ruled out if a significant threshold shift (STS) has been noted. A tympanogram may be useful in identifying individuals with conductive rather than sensorineural hearing loss. It is strongly recommended that tympanometry be utilized in ruling out conductive hearing loss.

Individuals with a high-frequency average loss greater than 45 dB bilaterally may have problems with speech discrimination.

PTS=permanent threshold shift

Individuals are entered on this program based on the results of industrial hygiene surveys. In the absence of IH data, individuals exposed to sound levels greater than 84 dB(A) or 140 dB peak sound pressure level for impact or impulse noise shall be considered at risk and included in the hearing conservation program. Hearing tests are recorded on DD Form 2215 and DD Form 2216.

REFERENCES:

1. OSHA STANDARD [29 CFR 1910.95](#)
2. [OPNAV 5100.23](#) (series), Chapter 18;
3. [OPNAV 5100.19](#) (series), Chapter B4;
4. [DOD INST 6055.12](#), DoD Hearing Conservation Program, March 5, 2004.

PROGRAM REVISED Linda Day, Mar 06.

NOISE - FOLLOW UP OF STS (#1 AND/OR #2)

512

STRESSOR(S) IN THIS PROGRAM:

noise

EXAM ELEMENT	Program Frequency	Based on results of annual monitoring		
		BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Ringing in the ear (tinnitus)				***
Ruptured ear drum				***
Loss or change in hearing				***
Problem hearing conversations/people				***
Comments on medical history:				***
Laboratory:				
Audiology:				
Audiogram - follow-up (DD 2216)				***
Comments on laboratory results:				***
Physical examination:				
Ears (tympanic membranes)				***
Other appropriate examination (specify)				***
Comments on physical examination:				***
Hearing conservation:				
Has baseline been reestablished due to PTS?				***
High frequency average exceeds 45 db bilaterally?				***
Ear plugs fitted and issued?				***
Refer to audiologist or physician?				***
Special notations:				
Written notification of permanent threshold shift required				***
Recommendations:				***

***This program is designed for follow up when a significant threshold shift (STS), occurs at the monitoring audiogram.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Hearing test results are documented on DD Form 2215 and DD Form 2216.

Screening tympanometry can be used to determine if the STS has resulted from middle ear pathology.

Individuals with a high-frequency average loss greater than 45 dB bilaterally may have problems with speech discrimination.

Guidelines for follow-up and referral are contained in the NAVOSH Program Manuals listed in the program description.

A sample format for written notification of permanent threshold shift is in [C11.2, Physician's/Provider's Written Opinion Samples](#).

PTS=permanent threshold shift

REFERENCES:

1. [OPNAV 5100.23\(series\), Chapter 18](#);
2. [OPNAV 5100.19 \(series\), Chapter B4](#);
3. [29 CFR 1910.95](#);
4. [DOD INST 6055.12](#), DoD Hearing Conservation Program, March 5, 2004;
5. [NEHC Tech Manual 6260.51.99-2 \(Sep 04\)](#) Navy Medical Department Hearing Conservation Program Procedures (http://www-nehc.med.navy.mil/downloads/occmcd/TechManualHCPfinal9_22allcomments.pdf)

PROGRAM REVISED: Linda Day, March 06.

RADIATION – IONIZING

505

STRESSOR(S) IN THIS PROGRAM:

ionizing radiation

Program Frequency	<25	None after PE
	25-49	Every five years
	50-59	Every two years
	>59	Annually

PROGRAM DESCRIPTION:

This program is designated solely to provide guidance on scheduling frequency and references.
 Tests and forms required are promulgated in: Radiation Health Protection Manual,
 NAVMED P-5055.

PROGRAM REVISED 10/97.

RADIATION - LASER (CLASS 3B & 4)

506

STRESSOR(S) IN THIS PROGRAM:

laser

EXAM ELEMENT	Program Frequency	Baseline and termination		
		BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)		Yes		Yes
Major illness or injury		Yes		Yes
Hospitalization or surgery		Yes		Yes
Cancer		Yes		Yes
Back injury		Yes		Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)		Yes		Yes
Have you ever smoked		Yes		Yes
Do you currently smoke (packs/day)		Yes		Yes
Heart disease, high blood pressure, or stroke		Yes		Yes
Current medication use (prescription or OTC)		Yes		Yes
Medication allergies		Yes		Yes
Any reproductive health concerns		Yes		Yes
Skin disease		Yes		Yes
Change or loss of vision		Yes		Yes
Contact lens use		Yes		Yes
Lens surgery		Yes		Yes
Photosensitizing medications		Yes		Yes
Unusual sensitivity to sunlight		Yes		Yes
Cataracts		Yes		Yes
Eye irritation		Yes		Yes
Eye injury		Yes		Yes
Glaucoma		Yes		Yes
Work history of:				
Exposure to non-ionizing radiation (laser, IR, MW, UV)		Yes		Yes
Eye injury		Yes		Yes
Comments on medical history:		Yes		Yes
Laboratory:				
Optometry:				
Date of most recent refraction - when applicable		Yes		Yes
Current refraction prescription - when applicable		Yes		Yes
Vision screen (visual acuity)		Yes		Yes
External ocular and fundus examination		Yes		Yes
Comments on laboratory results:		Yes		Yes
Physical examination:				
Vital signs		Yes		Yes

EXAM ELEMENT	BASE	PERI	TERM
Special attention in examination to:			
Eyes	Yes		Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes		Yes
Other appropriate examination (specify)	Yes		Yes
Comments on physical examination:	Yes		Yes
Is surveillance/PPE consistent with exposures	Yes		Yes
Are any abnormalities related to exposures/occupations	Yes		Yes
Recommendations:	Yes		Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Enrollment in this program is limited to those personnel who are clearly at risk from exposure to laser radiations.

The preplacement examination must be performed before assignment involving risk of exposure to class 3b or 4 lasers and establishes a baseline for comparison and measurement following an accidental exposure or ocular damage. Examinations for other purposes that include the required information satisfy the requirements of reference 1. When constrained by ship operations or deployment, perform the examination at the earliest opportunity. Complete the termination examination as soon as practical subsequent to termination of duties involving lasers.

Incidental personnel must have documented in their medical record a visual acuity examination. Incidental personnel are described as those personnel whose work makes it possible, but unlikely, that they will be exposed to sufficient laser energy to damage their eyes.

Preplacement and termination laser examinations may include the following tests as deemed necessary by the medical examiner.

1. Amsler grid or other tests of macular function for distortions or scotomas.
2. Dilated, direct view ophthalmoscopic examinations of the retina and slit lamp examinations of the cornea and lens to describe any pathology or deviation from the normal. Refer any retinal lesions to an ophthalmologist or optometrist for evaluation and photographic documentation.
3. Skin examination if the worker has a history of photosensitivity or works with UV lasers.

REFERENCES:

1. [BUMEDINST 6470.23](http://navymedicine.med.navy.mil/Files/Media/directives/6470-23.pdf) (<http://navymedicine.med.navy.mil/Files/Media/directives/6470-23.pdf>), dated Aug 1999, Medical Management of Non-ionizing Radiation Casualties.
2. ANSI Z136.1 of 1993;
3. [OPNAVINST 5100.23](#) (current series).

PROGRAM REVISED by J. Georgette Dougherty, RN, Feb 2006.

VIBRATION, HAND-ARM

508

STRESSOR(S) IN THIS PROGRAM:

hand-arm (segmental) vibration

	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Do you use smokeless tobacco	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Peripheral vascular disease	Yes	Annual	No	
Cold injury (frostbite, chill, trench ft, hypothermia)	Yes	Annual	No	
Neur disorder, gait change, paresthesia, coord loss	Yes	Annual	No	
Diabetes or other endocrine gland disorder	Yes	Annual	No	
Vibration white finger disease	Yes	Annual	No	
Work history of:				
Exposure to vibration (segmental or whole body)	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Special attention in examination to:				
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No	
Back & musculoskeletal system	Yes	Annual	No	
Peripheral vascular system (Raynaud's)	Yes	Annual	No	
Eyes	Yes	Annual	No	
Other appropriate examination (specify)	Yes	Annual	No	
Comments on physical examination:	Yes	Annual	No	
Is surveillance/PPE consistent with exposures	Yes	Annual	No	
Are any abnormalities related to exposures/occupations	Yes	Annual	No	
Recommendations:	Yes	Annual	No	

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Smoking plays a significant role in the development of hand-arm vibration syndrome (HAVS). Individuals who smoke should be counseled in smoking cessation.

Symptoms of peripheral vascular and neurological disease can be documented using a standard staging system so as to provide a quantitative description of the involvement of the vascular/neurological system. Workers in stage 2 HAVS or above on the Stockholm Workshop classification scale should be considered for removal from exposure until signs and symptoms no longer meet the criteria for stage 1. If HAVS is permitted to progress beyond Stage 2 by the continued use of vibrating tools, the effects can become irreversible (NIOSH p. 85).

The Stockholm Workshop classification scale for cold-induced peripheral vascular symptoms in the hand-arm vibration syndrome.*,+

STAGE	DESCRIPTION
0	No attacks
1 mild	Occasional attacks that affect only the tips of one or more fingers
2 moderate	Occasional attacks that affect the distal and middle (rarely also proximal) phalanges of one or more fingers
3 severe	Frequent attacks affecting all phalanges of most fingers
4 very severe	As in stage 3, with trophic skin changes in the finger tips

The Stockholm Workshop classification scale for sensorineural stages of the hand-arm vibration syndrome.*,+

STAGE	DESCRIPTION
OSN	Exposed to vibration but no symptoms
1SN	Intermittent numbness with or without tingling
2SN	Intermittent or persistent numbness, reduced sensory perception
3SN	Intermittent or persistent numbness, reduced tactile discrimination and/or manipulative dexterity

*Adapted from Brammer et al. (1987)

+The stage is determined separately for each hand.

Source: NIOSH Criteria for a Recommended Standard. Occupational Exposure to Hand-Arm Vibration, National Institute for Occupational Safety and Health, Sept 1989.

REFERENCES:

1. [Criteria for a recommended standard...Occupational Exposure to Hand-Arm Vibration, NIOSH Sept 1989, http://www.cdc.gov/niosh/89-106.html](http://www.cdc.gov/niosh/89-106.html) ;
2. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. ACGIH, current edition.
3. Mansfield, Neil J. Human Response to Vibration. [ACGIH](#): 2004; ISBN: 0-415-28238-X.
4. Wasserman, Donald E & Pelmar, P.L. Hand-Arm Vibration: A comprehensive guide for occupational health professionals. 2nd edition: OEM Press: 1998.
5. [ISO 5349. Mechanical vibration—Measurement and evaluation of human exposure to hand-transmitted vibration.](#)

6. [Hand Arm Vibration Threshold Limits," DoD Ergonomics Working Group News, Issue 55, August 2006.](#)

PROGRAM REVISED: Oct 2006, Susan Davis, RN, COHN-S

WHOLE BODY VIBRATION

511

STRESSOR(S) IN THIS PROGRAM:

whole body vibration

	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No	
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Peripheral vascular disease	Yes	Annual	No	
Headache, dizziness, light-headedness, weakness	Yes	Annual	No	
Nausea or vomiting	Yes	Annual	No	
Change or loss of vision	Yes	Annual	No	
Chest pain, angina, heart attack	Yes	Annual	No	
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No	
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	No	
Kidney disease	Yes	Annual	No	
Problems with urination/blood in urine	Yes	Annual	No	
Current pregnancy (self or spouse)	Yes	Annual	No	
Infertility or miscarriage (self or spouse)	Yes	Annual	No	
Vibration white finger disease	Yes	Annual	No	
Work history of:				
Exposure to vibration (segmental or whole body)	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	Annual	No	
Comments on laboratory results	Yes	Annual	No	
Physical examination:				
Vital signs	Yes	Annual	No	

EXAM ELEMENT	BASE	PERI	TERM
Special attention in examination to:			
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Back & musculoskeletal system	Yes	Annual	No
Cardiovascular system	Yes	Annual	No
Peripheral vascular system (Raynaud's)	Yes	Annual	No
Varicose veins of lower extremities	Yes	Annual	No
Eyes	Yes	Annual	No
Abdomen	Yes	Annual	No
Genitourinary tract	Yes	Annual	No
Hemorrhoids	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
REFERENCES:

1. Seidel H., Heide R., Long-term effects of whole-body vibration; a critical survey of the literature, *International Archives of Occupational Environmental Health*, 1986:58:1-12.
2. Mansfield, Neil J. *Human Response to Vibration*. [ACGIH](#): 2004; ISBN: 0-415-28238-X.
3. [Documentation of the threshold limit values for physical agents, 7th Ed.](#) ACGIH: 2001; Publication #0100DocP/A; ISBN: 978-1-882417-43-8.
4. ANSI S3.18-1979 (R 1993) American National Standard Guide for the Evaluation of Human Exposure to Whole-Body Vibration.
5. Navy Safety Center: [Acquisition safety vibration website](#).

PROGRAM REVISED: Oct 2006, Susan Davis, RN, COHN-S.

Chapter 6:C6. Mixed ExposuresC6.1. Introduction and Changes

Mixed exposures were included in a separate section to give guidance for screening individuals who may be exposed to a category of chemicals or whose specific exposure may not be known. For a mixed chemical exposure such as mixed solvents, the worker is generally placed into this program when quantitative data on specific exposures are unknown. In some cases, it may be appropriate to use this program if there are quantitative data showing overexposure to a specific solvent and there is no corresponding matrix program for that solvent.

For example, a spray painter may be exposed to multiple solvents. IH data could demonstrate overexposure to one solvent out of the mixture for which there is no corresponding matrix program. In this case, the toxicity of the specific solvent should be reviewed by an occupational medicine specialist to see if the mixed solvent program needs to be modified. When IH data are available and there is a corresponding matrix program available for that chemical, then workers should be entered in the appropriate program for the specific stressor. Occupational health staff should forward a request for review of a new program to the Matrix Committee (see [C11.1, Suggested or Requested Changes in the Medical Matrix](#)) for any stressor where IH data has indicated an overexposure requiring medical surveillance and no matrix program exists for that stressor.

A new program, Wood Dust was added. Periodicity for cholinesterase screening was revised in program 179, Organophosphate/Carbamate Compounds.

All new tests are printed in bold letters.

Mixed Exposures

Acid/Alkali (pH <4.0 or >11.0)

Anesthetic Gases

Animal Associated Diseases

Hazardous Drugs

Herbicides

Manmade Mineral Fibers

Metal Fumes

Metalworking Fluids

Mixed Solvents

Organophosphate/Carbamate Compounds

Wood Dust

ACID/ALKALI (PH<4.0/PH>11.0)

601

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
sulfuric acid	WS5600000	7664-93-9
hydrochloric acid	MW4025000	7647-01-0
nitric acid	QU5775000	7697-37-2
phosphoric acid	TB6300000	7664-38-2
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Peripheral vascular disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Contact lens use	Yes	Annual	No
Eye irritation	Yes	Annual	No
Eye injury	Yes	Annual	No
Tooth or gum disease	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Work history of:			
Exposure to hydrogen fluoride or inorganic fluorides	Yes	Annual	No
Eye injury	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Peripheral vascular system (Raynaud's)	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Eyes	Yes	Annual	No
Gums (e.g. lead lines?)	Yes	Annual	No
Teeth (acid erosion)	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

REFERENCES:

PROGRAM REVISED: 10/97.

ANESTHETIC GASES

108

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
halothane	KH6550000	151-67-7
nitrous oxide	QX1350000	10024-97-2
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Hepatitis or jaundice	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Kidney disease	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Impotence or sexual dysfunction	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Epilepsy (seizure disorder)	Yes	Annual	Yes
Problems with numbness, tingling, weakness, in hands or feet	Yes	Annual	Yes
Migraine headache	Yes	Annual	Yes
Mental/emotional illness	Yes	Annual	Yes
Depression, diff concentrating, excessive anxiety	Yes	Annual	Yes
Personality change	Yes	Annual	Yes
Work history of:			
Exposure to chemotherapeutic agents	Yes	Annual	Yes
Exposure to anesthetic gases	Yes	Annual	Yes
Exposure to ethylene oxide	Yes	Annual	Yes
Exposure to carcinogens	Yes	Annual	Yes
Family history of:			
Blood diseases (anemia)	Yes	Annual	Yes
Genetic disease (including children)	Yes	Annual	Yes

EXAM ELEMENT	BASE	PERI	TERM
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Physical examination:			
Required when positive history questions are obtained:			
Vital signs	Yes	***	Yes
Special attention in examination to:			
Central nervous system	Yes	***	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	***	Yes
Genitourinary tract	Yes	***	Yes
Testes (male)	Yes	***	Yes
Liver	Yes	***	Yes
Mucous membranes	Yes	***	Yes
Other appropriate examination (specify)	Yes	***	Yes
Comments on physical examination:	Yes	***	Yes
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	Yes
Substance(s) suspected human mutagenic/fetotoxic effects	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

***Physical exam elements are given when positive answers on annual history questions are obtained.

PROGRAM DESCRIPTION:

REFERENCES:

1. NIOSH Criteria For a Recommended Standard...[Occupational Exposure to Waste Anesthetic Gases and Vapors. DHEW Publication No. 77-140 \(http://www.cdc.gov/niosh/77-140.html\)](http://www.cdc.gov/niosh/77-140.html) ;
2. Williams, Louise A., Reproductive Health Hazards in the Workplace, J.B. Lippincott Company, Philadelphia, 1988;
3. Greenberg MI, Hamilton RW, Phillips, SD; Occupational, Industrial and Environmental Toxicology, Mosby St. Louis, 1997;
4. Suruda, A, Health Effects of Anesthetic Gases, Occupational Medicine State of the Art Reviews, Vol. 12/No. 4, Oct-Dec 1997, Hanley & Belfus, Inc., Philadelphia.
5. Halothane Hepatotoxicity, 2004, (<http://www.emedicine.com/med/topic942.htm>)
6. [Halothane, National Library of Medicine \(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_generic?tbl=TblAgents&id=205\)](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_generic?tbl=TblAgents&id=205)
7. [Waste anesthetic gases, National Library of Medicine \(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_generic?tbl=TblAgents&id=684\)](http://hazmap.nlm.nih.gov/cgi-bin/hazmap_generic?tbl=TblAgents&id=684)

PROGRAM REVISED by Dr. Brent Gibson, Feb 2006.

ANIMAL ASSOCIATED DISEASE**207****STRESSOR(S) IN THIS PROGRAM:**

animal associated disease

EXAM ELEMENT	Program Frequency	Annual		
		BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	***		No
Major illness or injury	Yes	***		No
Hospitalization or surgery	Yes	***		No
Cancer	Yes	***		No
Back injury	Yes	***		No
Do you drink 6 or more drinks per week	Yes	***		No
Have you ever smoked	Yes	***		No
Do you currently smoke (packs/day)	Yes	***		No
Heart disease, high blood pressure, or stroke	Yes	***		No
Current medication use (prescription or OTC)	Yes	***		No
Medication allergies	Yes	***		No
Any reproductive health concerns	Yes	***		No
Allergies (asthma, hay fever, eczema)	Yes	***		No
Skin disease	Yes	***		No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	***		No
Current pregnancy (self or spouse)	Yes	***		No
Comments on medical history:	Yes	***		No
Laboratory:				
Additional lab tests:				
Tuberculosis screen	Yes	***		No
Comments on laboratory results:	Yes	***		No
Physical examination:				
Vital signs	Yes	***		No
Other appropriate examination (specify)	Yes	***		No
Comments on physical examination:	Yes	***		No
Qualifications:				
Current immunizations	Yes	***		No
Is surveillance/PPE consistent with exposures	Yes	***		No
Are any abnormalities related to exposures/occupations	Yes	***		No
Recommendations:	Yes	***		No

PROGRAM DESCRIPTION:**PROVIDER COMMENTS:**

This surveillance category includes workers in a wide variety of settings with potential exposure to animals which may cause disease. Exposure may involve the direct care of or contact

with animals (live or sacrificed) or their living quarters, viable tissues, body fluids or wastes. Exposures include laboratory animals, animal pests, and livestock.

Illnesses fall largely into one of two groups: sensitization and infectious. Infectious agents of concern can include anthrax, brucellosis, leptospirosis, ornithosis, Q-fever, toxoplasmosis, rabies, and hantavirus.

Because of the variety of potential exposures and the specific nature of their effects, pre-placement and annual medical surveillance elements must be individualized. Placement in this surveillance program should not be driven by job title but by identified exposures, or potential exposures, to specific animal associated disease.

General Guidelines:

- a. In addition to exposure-appropriate history, physical examination, and laboratory testing, the worker should be evaluated regarding his/her understanding of the exposures, their potential health effects, and symptoms which should prompt medical attention.
- b. The issue of obtaining and freezing serum from each worker at the time of preplacement examination and periodically thereafter is controversial. The decision to maintain stored serum should be individualized based on exposure, clinical necessity, and published guidance. The recommended protocol for workers exposed to hantavirus, for instance, includes a stored frozen sample.

Examples of individual requirements follow. Local considerations may warrant more comprehensive measures.

Test	RISK CATEGORY		
	1 rodents, rabbits and aquatics	2 cats, dogs, livestock and ferrets	3 nonhuman primates
Tb Screening	B	B	B, Q6mo
Tetanus	B,P	B,P	B, P
Toxoplasmosis Titer (1)		B	
Rabies Prophylaxis (2)		B,P	
Q Fever Titer (3)		B	
Rubeola (4)			B

B=baseline examination; P=periodic examination

(For pathology personnel, the highest category of animal examined applies.)

(1) Women of child-bearing age who are occupationally exposed to cats and/or their waste should be screened for toxoplasmosis and receive appropriate health education regarding the risk of this disease during pregnancy. Effort should be made to arrange temporary job reassignment while a susceptible employee is pregnant.

(2) Individuals who should receive pre-exposure prophylaxis with human diploid cell rabies vaccine (HDCV) include those who:

- a. work directly with rabies virus

- b. have direct contact with animals in quarantine
- c. have exposure to potentially infected animal body organs or perform post-mortem examinations on animals with a history of poorly defined neurological disorders
- d. have the responsibility for capturing or destroying wild animals
- e. have large animal (category 2) contact where a potential for exposure exists.

(3) Employees at risk of exposure to Q fever include those with direct contact with *Coxiella burnetii* and those who handle or use products of parturition (placenta, amniotic fluid, blood or soiled bedding) from infected sheep, goats, or cattle. At the time of the preplacement exam, individual should be assessed for the likelihood of developing chronic sequela of Q fever should they acquire it, (immunosuppressed individuals and those with valvular or congenital heart valve problems).

(4) Rubeola immunization or documented evidence of immunity or vaccination.

For guidelines on preplacement requirements and periodic medical surveillance for specific animal exposures, contact the Navy Environmental Health Center or the nearest Navy Environmental and Preventive Medicine Unit.

ANIMAL-ASSOCIATED DISEASE:	CONSIDER:	
Respiratory hazards from inhaled dusts	Asthma specific screening questionnaire	
Dermatologic hazards	Screen for history of contact dermatitis (irritant, allergic) Screen for dermatophyte infections	
Zoonotic infections (consider screening if known exposure, high risk, or symptomatic)	Anthrax Atypical mycobacterium infections Brucellosis Capnocytophaga Cat-scratch fever Crimea-Congo hemorrhagic fever Erysipeloid	Glanders Leptospirosis Newcastle disease Orf (Contagious ecthyma) Pasteurellosis Plague Psittacosis Rift Valley fever Tularemia

REFERENCES:

1. Garibaldi R, Janis B, Occupational Infections in Rom, William N, Environmental and Occupational Medicine, 2nd ed, Little Brown, 1992.
2. Rival JC, Bayer RA, Johnson DK, The NIH animal handlers medical surveillance program. J Occup Med 26(2):115-117, 1984 (Manual revised 1/96).
3. MMWR, 42 (RR-11), July 30, 1993.

4. MMWR, 43 (RR-13) October 28, 1994.
 5. Ladou, 3rd Ed. Pp 287-306.
 6. HAZMAP (<http://hazmap.nlm.nih.gov>).
 7. HAZMAP re: anthrax
(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_generic?tbl=TblDiseases&id=181)
 8. HAZMAP re: brucellosis
(http://hazmap.nlm.nih.gov/cgi-bin/hazmap_generic?tbl=TblDiseases&id=31)
- PROGRAM REVISED 3/97.

HAZARDOUS DRUGS**110****STRESSOR(S) IN THIS PROGRAM:**

antineoplastic drugs (vincristine, dacarbazine, mitomycin, cytosine arabinoside, fluorouracil)

EXAM ELEMENT	Program Frequency		
	BASE	PERI	TERM
Medical history: have you ever had:		Annual	
Personal history of			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes
Major illness or injury	Yes	Annual	Yes
Hospitalization or surgery	Yes	Annual	Yes
Cancer	Yes	Annual	Yes
Back injury	Yes	Annual	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes
Have you ever smoked	Yes	Annual	Yes
Do you currently smoke (packs/day)	Yes	Annual	Yes
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes
Current medication use (prescription or OTC)	Yes	Annual	Yes
Medication allergies	Yes	Annual	Yes
Any reproductive health concerns	Yes	Annual	Yes
Treatment with steroids or cancer (cytotoxic) drugs	Yes	Annual	Yes
Chest pain, angina, heart attack	Yes	Annual	Yes
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	Yes
Liver disease	Yes	Annual	Yes
Current pregnancy (self or spouse)	Yes	Annual	Yes
Infertility or miscarriage (self or spouse)	Yes	Annual	Yes
Work history of:			
Exposure to chemotherapeutic/antineoplastic agents	Yes	Annual	Yes
Exposure to ionizing radiation	Yes	Annual	Yes
Exposure to skin irritants	Yes	Annual	Yes
Exposure to carcinogens	Yes	Annual	Yes
Family history of:			
Genetic disease (include children)	Yes	Annual	Yes
Cancers (leukemia, tumors)	Yes	Annual	Yes
Comments on medical history:	Yes	Annual	Yes
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes
Differential white blood cell count	Yes	Annual	Yes
Urinalysis:			
Routine:			

EXAM ELEMENT	BASE	PERI	TERM
Urinalysis with microscopic	Yes	Annual	Yes
Additional lab tests:			
Pregnancy testing or laboratory testing of Fertility if requested by employee and deemed Appropriate by the physician	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Cardiovascular system	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Liver	Yes	Annual	Yes
Mucous membranes	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Skin-with regard to malignant & pre-malignant conditions	Yes	Annual	Yes
Immunocompetence (lymphatic system)	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Substance(s) known human carcinogen	Yes	Annual	Yes
Substance(s) known mutagenic or fetotoxic effects	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

PROGRAM DESCRIPTION:
REFERENCES:

1. OSHA Instruction TED 1-0.15A, January 20, 1999, Office of Science and Technology Assessment;
2. NAVMEDCOMINST 6570.1, 29 May 86, ANTINEOPLASTIC DRUG GUIDELINES.

PROGRAM REVIEWED 3/2000

HERBICIDES**216**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
paraquat	DW1960000	4685-14-7	
diquat	JM5690000	85-00-7	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No
Comments on laboratory results	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify):	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

PROVIDER COMMENTS: Chronic effects of diquat dibromide are similar to those of paraquat and hence recommendations for paraquat exposure are identical to those for diquat. Chronic exposure to either herbicide causes cataracts in animals; hence visual acuity screening should be evaluated carefully.

REFERENCES:

1. NIOSH Specific Medical Tests or Examinations Published in the Literature for OSHA-Regulated Substances Paraquat (Dec 2004) <http://www.cdc.gov/niosh/73-11025.html>
2. Morgan DP. Recognition and Management of Pesticide Poisonings, Fourth Edition. United States Environmental Protection Agency. 1989:76-82;
3. Klaassen CD, Amdur MO, Doull J. Cassarett And Doull's Toxicology, Third Edition. New York, NY: Macmillan Publishing Co. 1986:556-557;
4. Keifer, MC, Human Health Effects of Pesticides, Occupational Medicine state of the Art Reviews, Volume 12/Number 2, Apr-Jun 1997, Hanley & Belfus, Inc. 5. Stevens, J. T. and Sumner, D. D. Herbicides. In Handbook of Pesticide Toxicology. Hayes, W. J., Jr. and Laws, E. R., Jr., Eds. Academic Press, New York, NY, 1991.10-88

PROGRAM REVISED FEB 2006, CDR Ken Lankin, MC, USN.

MANMADE MINERAL FIBERS**212**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
glasswool			
glass filament			
rockwool	PY8070000		
slagwool			
ceramic fiber: Fiberfrax; Fibermax; Fireline Ceramic; Fybex; Man; Nextel; Pkt; Saffil	BD1450000	1302-76-7	
	Program Frequency	Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor) (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/ day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease			
Lung or resp disease (COPD, bronchitis, pneumonitis)	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Work history of:			
Exposure to dusts (coal, blast, grit, sand, nuisance)	Yes	Annual	No
Exposure to asbestos	Yes	Annual	No
Exposure to silica or sand	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Radiology:			
Chest x-ray (PA)	Yes	Penta-ennial	
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Special notations:			
Substance(s) suspected human carcinogen	Yes	Annual	No
Is surveillance/PPE consistent with exposures listed on OPNAV 5100/15?	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
REFERENCES:

1. NAVENVIRHLTHCEN Technical Manual NEHC-TM91-1 Oct 1990;
2. Marsh, et al. Mortality among a cohort of US manmade mineral fiber workers: 1985 Follow-up. J Occ Med, Jul 90. Vol.32, 594-604.

PROGRAM REVISED 10/97.

METAL FUMES**602****STRESSOR(S) IN THIS PROGRAM:**

metal fumes

EXAM ELEMENT	Program Frequency		BASE	PERI	TERM
	Annual				
Medical history: have you ever had:					
Personal history of:					
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	Annual	No
Major illness or injury	Yes	Annual	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	Yes	Annual	No
Cancer	Yes	Annual	Yes	Annual	No
Back injury	Yes	Annual	Yes	Annual	No
Do you drink 6 or more drinks per week	Yes	Annual	Yes	Annual	No
Have you ever smoked	Yes	Annual	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	Yes	Annual	No
Medication allergies	Yes	Annual	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	Annual	No
Skin disease	Yes	Annual	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes	Annual	No
Change or loss of vision	Yes	Annual	Yes	Annual	No
Cataracts	Yes	Annual	Yes	Annual	No
Eye irritation	Yes	Annual	Yes	Annual	No
Eye injury	Yes	Annual	Yes	Annual	No
Perforation of nasal septum	Yes	Annual	Yes	Annual	No
Shortness of breath	Yes	Annual	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	Yes	Annual	No
Kidney disease	Yes	Annual	Yes	Annual	No
Work history of:					
Exposure to lead	Yes	Annual	Yes	Annual	No
Exposure to chromium or chromic acid	Yes	Annual	Yes	Annual	No
Eye injury	Yes	Annual	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	Yes	Annual	No
Comments on medical history:	Yes	Annual	Yes	Annual	No
Laboratory:					
Serum chemistry:					
BUN and creatinine	Yes	Annual	Yes	Annual	No
SGOT (AST)	Yes	Annual	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Urinalysis:			
Routine:			
Urinalysis without microscopic	Yes	Annual	No
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

This program is focused toward nonspecific dust, fumes and other irritants as well as potential UV effects experienced by welders. Specific programs in addition to this one will depend on individual exposures and may include; lead, cadmium, chromium, nickel, manganese and others.

REFERENCES:

1. NIOSH Criteria for a Recommended Standard...Welding, Brazing, and Thermal Cutting. Washington, D.C. U.S. Department of Health and Human Services; 1988. DHHS (NIOSH) Pub. No. 88-110.
2. Pierce JO. Metal Fume Fever. In: Parmeggiani L, ed. Encyclopedia of Occupational Health and Safety, volume 2. Third Edition, Geneva: International Labor Office, 1983:1339-1340.
3. NOTE: References for specific metals are listed in the appropriate programs.

PROGRAM REVISED 10/97.

METALWORKING FLUIDS

162

STRESSOR(S) IN THIS PROGRAM:

metalworking fluids

EXAM ELEMENT	Program Frequency		TERM
	BASE	PERI	
Medical history: have you ever had:		Annual	
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Eye irritation	Yes	Annual	No
Eye injury	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Pneumonia	Yes	Annual	No
Work history of:			
Eye injury	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	No
Exposure to respiratory irritants	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Annual	No
Radiology:			
Chest x-ray (PA)	Yes	No	No
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Eyes	Yes	Annual	No
Mucous membranes	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

Due to the modest association with prostate cancer, workers exposed to metalworking fluids should be counseled on this risk. However, as the effect requires a latency of greater than 25 years, screening for prostate cancer above the recommendations for the general population may not be warranted (Agalliu, 664-71).

REFERENCES:

1. Agalliu I, Kriebel D, Quinn MM, Wegman DH, Eisen, EA. "Prostate cancer incidence in relation to time windows of exposure to metalworking fluids in the auto industry." *Epidemiology*. 2005 Sep;16(5): 664-71.

PROGRAM REVISED Dr. Christopher Smelser, Nov 2005.

MIXED SOLVENTS**603**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
cyclohexanone	GW1050000	108-94-1
glycol ethers (other than ethoxy and methoxy)		
hexone (methyl isobutyl ketone)	SA9275000	108-10-1
methyl n-amyl ketone	MJ5075000	110-43-0
2-pentanone (methyl propyl ketone)	SA7875000	107-87-9
	Program Frequency	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Hepatitis or jaundice	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Contact lens use	Yes	Annual	No
Eye irritation	Yes	Annual	No
Eye injury	Yes	Annual	No
Liver disease	Yes	Annual	No
Kidney disease	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Depression, diff concentrating, excessive anxiety	Yes	Annual	No
Personality change	Yes	Annual	No
Work history of:			
Eye injury	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	No
Exposure to solvents (MEK, PERC, TCE, toluene...)	Yes	Annual	No
Comments on medical history:	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Laboratory:			
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	No
BUN and creatinine	Yes	Annual	No
SGOT (AST)	*	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Eyes	Yes	Annual	No
Liver	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis. When industrial hygiene data document exposure to specific stressors, i.e., lead or chromium, individuals should be entered on the appropriate programs for specific stressors.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

If IH data show exposure to a specific solvent that does not have a corresponding matrix program, placement into program 603 may be done after a review of the toxicity of the solvent. (See Introduction, Mixed Exposures section.)

REFERENCES:

1. [NIOSH Current Intelligence Bulletin 48: Organic Solvent Neurotoxicity. U.S. Department of Health and Human Services; 1987. DHHS \(NIOSH\) Publication No. 87-104. http://www.cdc.gov/niosh/87104_48.html.](http://www.cdc.gov/niosh/87104_48.html)
2. NOTE: References for specific solvents are listed in the appropriate programs.

PROGRAM REVISED Dr. Christopher Smelser, Nov 2005

ORGANOPHOSPHATE/CARBAMATE COMPOUNDS

179

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #
carbaryl	FC5950000	63-25-2
malathion	WM8400000	121-75-5
methyl parathion	TG0175000	298-00-0
parathion	TF4550000	56-38-2
ferbam	NO8750000	14484-64-1
propoxur	FC3150000	114-26-1
	Program Frequency	See program description

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung or resp disease (COPD, bronchitis, pneumonitis)	Yes	Annual	No
Use of anticholinergic drugs (donnatal)	Yes	Annual	No
Headache, dizziness, light-headedness, weakness	Yes	Annual	No
Nausea or vomiting	Yes	Annual	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	No
Migraine headache	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Work history of:			
Do you handle organophosphate or carbamate pesticides	Yes	Annual	No
Laboratory:			
Serum chemistry:			
RBC cholinesterase	Yes	*Quarterly	No
Plasma (or serum) cholinesterase	Yes	*Quarterly	No
Comments on laboratory results:	Yes	*Quarterly	No
Physical examination:			

EXAM ELEMENT	BASE	PERI	TERM
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	No
Respiratory system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

*At locations where organophosphate pesticides are used year-round, the worker should receive at least quarterly cholinesterase determinations. Routine physical examination during the pesticide use season may be limited to medical and occupational history, and cholinesterase. Physical examinations for signs of mild exposure are not recommended.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Personnel should be entered into medical surveillance if they are: exposed to airborne concentrations above the action level for 30 or more days per year; at significant risk of absorption from dermal exposure or ingestion; or performing an operation in an area where a worker has experienced toxicity related to pesticide exposure and exposure controls have not been in place long enough to assess their effectiveness.

Serum (or plasma) and red blood cell (RBC) cholinesterase baseline levels should be done at preplacement or before exposure. This baseline value should be the average of two or more tests taken at least 72 hours, but not more than 14 days apart, and analyzed at the same laboratory. If two tests are done and the difference between them exceeds 15%, a third baseline test should be performed. The average of the two closest values should be considered the true baseline value. All baseline tests should be taken when the worker has had no exposure to cholinesterase inhibitors for at least 30 days. Guidance on interpretation is contained in references (1) and (4).

REFERENCES:

1. Occupational Medical Surveillance Manual, DOD 6055.5-M, May 1998;
2. OPNAVINST 6250.4B, PEST MANAGEMENT PROGRAMS (due in July 1998);
3. Keifer MC, Human Health Effects of Pesticides, Occupational Medicine State of the Art Reviews, Volume 12/Number 2, Apr-Jun 1997, Hanley & Belfus, Inc.;
4. NEHC [Field Operations Manual, current edition](#).

PROGRAM REVISED 6/98.

WOOD DUST**604****STRESSOR(S) IN THIS PROGRAM:**

softwood dusts

hardwood dusts

EXAM ELEMENT	Program Frequency		TERM
	BASE	PERI	
Medical history: have you ever had:		Annual	
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Allergies (asthma, hay fever, eczema)	Yes	Annual	No
Skin disease	Yes	Annual	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	No
Rhinitis	Yes	Annual	No
Nose bleeds	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Cough (dry or productive)	Yes	Annual	No
Work history of:			
Prior respirator use	Yes	Annual	No
Exposure to dusts (coal, blast, grit, sand, nuisance)	Yes	Annual	No
Exposure to skin irritants	Yes	Annual	No
Exp to respiratory irritants	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Laboratory:			
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	No	No
Comments on laboratory results:	Yes	No	No
Physical examination:			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Nasal mucosa	Yes	Annual	No
Respiratory system	Yes	Annual	No

EXAM ELEMENT	BASE	PERI	TERM
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Wood dust has been associated with sinonasal cancer in cohorts of hardwood dust workers.
 Several wood dusts have been associated with asthma and allergic skin responses.

REFERENCES

1. Blot WJ, Chow WH, McLaughlin JK: Wood dust and nasal cancer risk: A review of the evidence from North America. *J Occup Environ Med* 1997 Feb;39(2):148-56;
2. Demers PA, Teschke K, Kennedy SM: What to do about softwood? A review of respiratory effects and recommendations regarding exposure limits. *Am J Ind Med* 1997 Apr;31(4):385-398.

NEW PROGRAM 3/98.

Chapter 7:

C7. Specialty Examinations

C7.1. Introduction and Changes

Requirements for performing specialty examinations are included in instructions, Civilian Personnel Instructions and federal and state laws. Instructions, technical manuals and publications used for this edition were current at the time of revision. Users of this manual must ensure that they have most current issue of the appropriate reference.

Every effort was made in preparing this section of the manual to include the minimum examination requirements. Medical personnel will then be able to add tests needed to meet the requirements of local and state law or activity imposed requirements. References or written protocols should be used when adding tests routinely to examinations.

Where there were no specific requirements prohibiting standardization, EKG's and lipid panels were standardized to a baseline and EKG and lipid panel at least once past age 40. After a baseline is established, the EKG and lipid panel are done only once past age 40 unless the provider requests otherwise.

Where strict instructions mandate program documentation, programs are maintained in this manual only for guidance on scheduling and to provide appropriate references. These programs are Aviation, Diver/Hyperbaric Worker, and Submarine Duty.

All new tests are printed in bold letters. A new screening program was added for Barber and Beauty Shop Employees, meeting the requirements in NAVMED P-5010, Manual of Naval Preventive Medicine. This program is generally managed by Preventive Medicine Technicians.

Construction, Railroad and Weight Handling Equipment Operators program was renamed, Weight Handling Equipment (Management of).

C7.2. Specialty Examinations

Aviation	Hazardous Waste Workers and Emergency Responders
Barber and Beauty Shop Employees	Health Care Workers (HCWs)
Childcare Worker	Military DOT, Explosive Handler/Operators (Interim Examination)
Department of Transportation (DOT) Vehicle Operators (Civilians)	Motor Vehicle Operator(Other than DOT)
Diver/Hyperbaric Worker	Naval Criminal Investigative Service
Explosives Handlers and Explosive Firefighter (Annual Screen)	Police/Guard Security
Firefighter (Preplacement and Periodic)	Respiratory User Certification Exam
Foodservice Personnel	Submarine Duty
Forklift Operator	Vehicle Operators (Civilians)
Freon Workers	Wastewater/Sewage Worker
	Weight Handling Equipment Managers

AVIATION**701****Program Frequency****By Age**

All Naval aviation personnel (officer and enlisted) will undergo a complete aviation medical examination (SF-88 and SF-93 or NAVMED 6120/2 as appropriate) within 30 days of their birthday at ages 21, 24, 27, 30, 33, 36, 39 and annually thereafter.

Air Force aviation personnel will undergo an aviation medical examination according to [AFI 48-123](#) that is available at www.e-publishing.af.mil (look under Electronic Publications, then choose Air Force Departmental publications (at top middle). The aviation medical exams are listed as 48 series (Aerospace Medicine), [AFI 48-123v1](#) through [AFI 48-123v4](#).)

PROGRAM DESCRIPTION:

This program is designed solely to provide guidance in scheduling frequency and references.

Medical examination is recorded on SF-88 and SF-93 or NAVMED 6130/2 (as appropriate). Detailed guidance is contained in [Manual of the Medical Department, NAVMED P-117, Chapter 15, Article 15-65](#).

PROVIDER COMMENTS:

This exam can only be performed by flight surgeons and BUMED-23 approved medical officers via special credentialing.

Physical exams and standards for aviation physicals are updated annually and available on the Internet at the NOMI home page: <http://www.nomi.navy.mil/code04/arwg97.htm>.

This document contains guidance for Class I, Class II, and Class III and enlisted aviation personnel. It also contains height and weight policies and clearance for non-military personnel to fly in USN/USMC Aircraft.

REFERENCES:

1. BUMEDNOTE 5410 of 14 Oct 99.
2. [AFI 48-123](#)

PROGRAM REVISED: COL Laura Torres-Reyes, Oct 2006.

BARBER AND BEAUTY SHOP EMPLOYEES

723

Program Frequency	Preplacement
EXAM ELEMENT	BASELINE
Medical history: have you ever had:	
Personal history of:	
Major illness or injury	Yes
Hospitalization or surgery	Yes
Cancer	Yes
Back injury	Yes
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes
Have you ever smoked	Yes
Do you currently smoke (packs/day)	Yes
Heart disease, high blood pressure, or stroke	Yes
Current medication use (prescription or OTC)	Yes
Medication allergies	Yes
Any reproductive health concerns	Yes
Skin disease	Yes
Hepatitis or jaundice	Yes
Tuberculosis	Yes
Infectious disease	Yes
Chronic abdominal pain, vomiting, other GI symptoms	Yes
Comments on medical history:	Yes
Laboratory:	
Additional lab tests:	
Appropriate by the physician	Yes
Comments on laboratory results:	Yes
Physical examination:	
Vital signs	Yes
Special attention in examination to:	
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes
Other appropriate examination (specify)	Yes
Comments on physical examination:	Yes
Certifications performed IAW:	
Navmed P-5010	Yes
Assessment:	Yes
Recommendations:	Yes

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

All barber shop and beauty shop employees, including personnel employed by a civilian contract, must be medically screened and determined to be free of communicable disease prior to their initial assignment. Unless necessary for local reasons, there is no requirement for periodic examinations. This screening examination may be performed by non-physician personnel.

REFERENCES:

1. Manual of Naval Preventive Medicine NAVMED P-5010, Chapter 2.

PROGRAM REVIEWED: 1/06 Dr. Jeffrey Derr.

CHILD CARE WORKER

703

	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Major illness or injury	Yes	Annual	No	
Hospitalization or surgery	Yes	Annual	No	
Cancer	Yes	Annual	No	
Back injury	Yes	Annual	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No	
Have you ever smoked	Yes	Annual	No	
Do you currently smoke (packs/day)	Yes	Annual	No	
Heart disease, high blood pressure, or stroke	Yes	Annual	No	
Current medication use (prescription or OTC)	Yes	Annual	No	
Medication allergies	Yes	Annual	No	
Any reproductive health concerns	Yes	Annual	No	
Skin disease	Yes	Annual	No	
Hepatitis or jaundice	Yes	Annual	No	
Tuberculosis	Yes	Annual	No	
Infectious disease	Yes	Annual	No	
History of chicken pox	Yes	Annual	No	
Chronic abdominal pain, vomiting, other GI symptoms	Yes	Annual	No	
Mental/emotional illness	Yes	Annual	No	
Depression, difficulty concentrating, excessive anxiety	Yes	Annual	No	
Treatment for drug or alcohol use	Yes	Annual	No	
Comments on medical history:	Yes	Annual	No	
Laboratory:				
Additional lab tests:				
Tuberculosis screen	Yes	Annual	No	
Comments on laboratory results:	Yes	Annual	No	
Physical examination:				
Vital signs	Yes	Annual	No	
Other appropriate examination (specify)	Yes	Annual	No	
Comments on physical examination:	Yes	Annual	No	
Qualifications:				
Current immunizations	Yes	Annual	No	
Measles/mumps/rubella immune status	Yes	Annual	No	
Varicella immune status	Yes	Annual	No	
Assessment:	Yes	Annual	No	
Recommendations:	Yes	Annual	No	

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

The immunization requirements promulgated by the various references can be summarized as follows:

- A. Immunizations against polio, tetanus, diphtheria and pertussis must be current. On October 26, 2005 the Advisory Committee on Immunization Practices (ACIP) voted to recommend routine use of a single dose of Tetanus, Diphtheria and Pertussis (Tdap) Vaccine for adults 19-64 years of age to replace the next booster dose of tetanus and diphtheria toxoids vaccine (Td). The ACIP also recommended Tdap for adults who have close contact with infants <12 months of age.
- B. Immunity to chickenpox (varicella), measles, mumps and rubella is required. This requirement can be met by documentation of physician-diagnosed illness (except rubella), serologic evidence of immunity, or documented immunization (for measles, 2 doses one month apart after 1 year of age on individuals born on or after 1957 is required).
- C. Specific requirements are outlined in the instructions listed in the program description.
- D. Unusual circumstances such as an outbreak, may necessitate additional requirements.
- E. Annual influenza immunization is strongly encouraged.

The purpose of the exam is to identify potentially communicable conditions. Scope of the exam would depend on results of the history, local public health requirements and communicable disease risk specific to the area.

For those child care worker applicants without a written record of polio immunization status, attendance at public school in the U.S. is adequate for presumption of prior oral polio vaccine administration.

REFERENCES: (OTHER);

1. Personnel health requirements are defined in OPNAVINST 1700.9D, Child Development Programs.
2. Current recommendations for immunizations are contained in BUMEDINST 6230.15, Immunizations and Chemoprophylaxis, Nov 95;
3. BUMEDNOTE 6230, Immunization Requirements and Recommendations, Apr 98;
4. NAVMEDCOMINST 6224.8, Tuberculosis Control Program, outlines management of tuberculosis testing programs.

PROGRAM REVIEWED 3/2000

**DEPARTMENT OF TRANSPORTATION (DOT) VEHICLE OPERATORS
(CIVILIANS)**

706

OCCUPATION(S) IN THIS PROGRAM:

DOT vehicle operators (civilian)

EXAM ELEMENT	Program Frequency		TERM
	BASE	PERI	
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Bienn	No
Major illness or injury	Yes	Bienn	No
Hospitalization or surgery	Yes	Bienn	No
Cancer	Yes	Bienn	No
Back injury	Yes	Bienn	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Bienn	No
Have you ever smoked	Yes	Bienn	No
Do you currently smoke (packs/day)	Yes	Bienn	No
Heart disease, high blood pressure, or stroke	Yes	Bienn	No
Current medication use (prescription or OTC)	Yes	Bienn	No
Medication allergies	Yes	Bienn	No
Any reproductive health concerns	Yes	Bienn	No
Use of seat belts (always, mostly, some, none)	Yes	Bienn	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Bienn	No
Syphilis or gonorrhea	Yes	Bienn	No
Headache, dizziness, light-headedness, weakness	Yes	Bienn	No
Nervous stomach or ulcer	Yes	Bienn	No
Head injury	Yes	Bienn	No
Change or loss of vision	Yes	Bienn	No
Loss or change in hearing	Yes	Bienn	No
Chest pain, angina, heart attack	Yes	Bienn	No
Repeated episodes of loss of or near loss of consciousness	Yes	Bienn	No
Kidney disease	Yes	Bienn	No
Epilepsy (seizure disorder)	Yes	Bienn	No
Problems with balance and coordination	Yes	Bienn	No
Problems with numbness, tingling, weakness in hands or feet	Yes	Bienn	No
Migraine headache	Yes	Bienn	No
Diabetes or other endocrine gland disorder	Yes	Bienn	No
Mental/emotional illness	Yes	Bienn	No
Depression, diff concentrating, excessive anxiety	Yes	Bienn	No
Treatment for drug or alcohol use	Yes	Bienn	No
Personality change	Yes	Bienn	No

EXAM ELEMENT	BASE	PERI	TERM
Muscle or joint problems	Yes	Bienn	No
Permanent defect from illness, disease or injury	Yes	Bienn	No
Family history of:			
Heart disease, high blood pressure, or stroke	Yes	Bienn	No
Comments on medical history:	Yes	Bienn	No
Laboratory:			
Serum chemistry:			
Baseline lipid profile	Yes	No	No
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	Bienn	No
Additional lab tests:			
EKG/lipid profile done once past age 40?	No	*	No
Cardiology:			
Electrocardiogram	Yes	*	No
Audiology:			
Audiogram	Yes	Bienn	No
Optometry:			
Vision screen (visual acuity)	Yes	Bienn	No
Color vision	Yes	Bienn	No
Visual fields	Yes	Bienn	No
Comments on laboratory results:	Yes	Bienn	No
Physical examination:			
Vital signs	Yes	Bienn	No
Special attention in examination to:			
Central nervous system	Yes	Bienn	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Bienn	No
Back & musculoskeletal system	Yes	Bienn	No
Extremities	Yes	Bienn	No
Cardiovascular system	Yes	Bienn	No
Peripheral vascular system (Raynaud's)	Yes	Bienn	No
Eyes	Yes	Bienn	No
Abdomen	Yes	Bienn	No
Genitourinary tract	Yes	Bienn	No
Respiratory system	Yes	Bienn	No
Ears (tympanic membranes)	Yes	Bienn	No
Other appropriate examination (specify)	Yes	Bienn	No
Comments on physical examination:	Yes	Bienn	No
Is surveillance/pep consistent with exposures	Yes	Bienn	No
Are any abnormalities related to exposures/occupations	Yes	Bienn	No
Recommendations:	Yes	Bienn	No

*EKG/Lipid panel should be done once after age 40.

PROGRAM DESCRIPTION:

Physical qualifications are contained in Federal Motor Carrier Safety Regulations, U. S. Department of Transportation, Federal Highway Administration, 49 CFR 391.41-49. A handbook containing the regulations can be ordered from: American Trucking Association 2200 Mill road, Alexandria, VA. 22314-4677, 1-800-ATA-LINE.

REFERENCES:

U. S. Department of Transportation, 49 CFR 391.41-49

PROGRAM REVIEWED 3/2000

**DEPARTMENT OF TRANSPORTATION (DOT) VEHICLE OPERATORS
(MILITARY) (SEE 721 & 712)**

PROGRAM DESCRIPTION:

Military personnel are exempt from the requirements of the Commercial Motor Vehicle Safety Act of 1986, and, in particular, from the requirements of 49 CFR Part 383 regarding physical examination requirements in order to obtain a commercial drivers license. The scope of the periodic examinations is considered sufficient to meet the requirements. The periodicity of examinations for active duty and reserve military personnel is outlined in the MANMED. Active duty members must meet the standards of MANMED, chapter 15, section III, with particular emphasis on the systems listed in that section. Navy Explosive Ordnance Disposal personnel must also meet the requirements of article 15-66.

PROVIDER COMMENTS:

This program is designed to provide guidance for physical standards of drivers who must meet the requirements from the Federal Department of Transportation. Activities must be familiar with individual state Department of Transportation motor vehicle operator requirements since some state requirements may be more stringent. Licensing officials in Public Works, Ordnance Department, Safety, Human Resources Office or Navy Supply can assist in determining the state requirements.

REFERENCES:

1. 49 CFR 391.41-49;
2. Marine Corps TM 11240-14/3B, Standard Licensing Procedures for Operators of Military Motor Vehicles;
3. DoD 4500.36-R, Management, Acquisition and Use of Motor Vehicles (http://www.efdlant.navfac.navy.mil/lantops_16/temc.htm);
4. NAVFAC P-300, Management of Civil Engineering Support Equipment, May 97 (http://www.efdlant.navfac.navy.mil/lantops_16/temc.htm)
5. Hartenbaum,N. The DOT Medical Examination, OEM Press, Boston, MA 1997.
6. A series of medical conferences on various diseases and commercial drivers were sponsored by DOT and the reports are available through National Technical Information Service (NITS). Condensed versions of these reports are available at <http://home.att.net/~NataH>.
7. Home page for FHWA - <http://www/fhwa.dot.gov/>
8. Regulations - <http://mcregis.fhwa.dot.gov/laws.htm>

PROGRAM REVISED: 3/2000

DIVER/HYPERBARIC WORKER**705****Program Frequency**

Diver Candidates	Diving Medical Exam (DME) upon initial application for diving duty.
All Designated Divers	Anniversary periodic DME at their 20 th , 25 th , 30 th , 35 th , 40 th , 45 th , and 50 th birthday. After age 50 DME ANNUALLY.

PROGRAM DESCRIPTION:

This program is designated solely to provide guidance on scheduling frequency. Disqualifying conditions, tests, and forms required are promulgated in [Manual of the Medical Department, NAVMED P-117, Chapter 15](#), Article 15-102, Change 126. SPECWAR and Special Operations personnel are covered by NAVMED P-117, Chapter 15, Article 15-105, Change 126. Tests and forms required are promulgated in Manual of the Medical Department, NAVMED P-117, Chapter 15, Article 15-66, Change 108.

PROVIDER COMMENTS:

The DME will ideally be conducted by an Undersea Medical Officer (UMO) or Diving Medical Officer (DMO). It may be done by any Navy credentialed independent practitioner or physician assistant physician as long as it is reviewed and countersigned by an UMO. In cases where no UMO or DMO is available to review the examination, guidance should be sought from Head Undersea Medicine, BUMED.

Per [OPNAVINST 3150.27B](#), DON civil service employee divers or diver candidates are subject to the same Diving Duty standards: NAVMED P-117, Chapter 15, Article 15-102, Change 126 DME Standards, or latest revision.

Diver candidates (or candidates for advanced diver training) must complete MILPERS 1220 Exhibit 8, U.S. Military Diving Medical Screening Questionnaire.

A full neurological exam must be documented in block 44 of DOD 2808.

Tympanic membrane mobility must be documented in block 72b of DOD 2808.

Annual PHA must document skin cancer screening.

An audiogram is required every 5 years, and if a permanent significant threshold shift (PSTS) occurs, an audiology surveillance is required every 2 years.

Divers require Hepatitis A and Hepatitis B immunizations.

REFERENCES:

PROGRAM REVISED: 10/2006, LCDR Jim Caviness.

EXPLOSIVES HANDLERS AND EXPLOSIVES VEHICLE OPERATORS (CIVILIANS)

720

Up to 60 years Age 60 and above	Program Frequency	By Age		
		Every two years	Annual	
	EXAM ELEMENT	BASE	PERI	TERM
	Medical history: have you ever had:			
	Personal history of:			
	Is your work exposure history current (OPNAV 5100/15)	Yes	By Age	No
	Major illness or injury	Yes	By Age	No
	Hospitalization or surgery	Yes	By Age	No
	Cancer	Yes	By Age	No
	Back injury	Yes	By Age	No
	Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	By Age	No
	Have you ever smoked	Yes	By Age	No
	Do you currently smoke (packs/day)	Yes	By Age	No
	Heart disease, high blood pressure, or stroke	Yes	By Age	No
	Current medication use (prescription or OTC)	Yes	By Age	No
	Medication allergies	Yes	By Age	No
	Use of seat belts (always, mostly, some, none)	Yes	By Age	No
	Any reproductive health concerns	Yes	By Age	No
	Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	By Age	No
	Syphilis or gonorrhea	Yes	By Age	No
	Headache, dizziness, light-headedness, weakness	Yes	By Age	No
	Nervous stomach or ulcer	Yes	By Age	No
	Head injury	Yes	By Age	No
	Change or loss of vision	Yes	By Age	No
	Loss or change in hearing	Yes	By Age	No
	Chest pain, angina, heart attack	Yes	By Age	No
	Repeated episodes of loss of or near loss of consciousness	Yes	By Age	No
	Kidney disease	Yes	By Age	No
	Epilepsy (seizure disorder)	Yes	By Age	No
	Problems with balance and coordination	Yes	By Age	No
	Problems with numbness, tingling, weakness in hands or feet	Yes	By Age	No
	Migraine headache	Yes	By Age	No
	Diabetes or other endocrine gland disorder	Yes	By Age	No
	Mental/emotional illness	Yes	By Age	No
	Depression, diff concentrating, excessive anxiety	Yes	By Age	No
	Treatment for drug or alcohol use	Yes	By Age	No
	Personality change	Yes	By Age	No

EXAM ELEMENT	BASE	PERI	TERM
Muscle or joint problems	Yes	By Age	No
Permanent defect from illness, disease or injury	Yes	By Age	No
Family history of:			
Heart disease, high blood pressure, or stroke	Yes	By Age	No
Comments on medical history:	Yes	By Age	No
Laboratory:			
Hematology:			
Hematocrit	Yes	By Age	No
Serum chemistry			
Fasting blood glucose	Yes	By Age	No
Baseline lipid profile	Yes	No	No
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	By Age	No
Additional lab tests:			
EKG/lipid profile done once past age 40?	No	*	No
Cardiology			
Baseline electrocardiogram	Yes	No	No
Audiology:			
Audiogram	Yes	By Age	No
Optometry:			
Vision screen (visual acuity)	Yes	By Age	No
Color vision	Yes	By Age	No
Visual fields	Yes	By Age	No
Tonometry over age 40 (if clinically indicated)	Yes	By Age	No
Comments on laboratory results:	Yes	By Age	No
Physical examination:			
Vital signs	Yes	By Age	No
Special attention in examination to:			
Central nervous system	Yes	By Age	No
Peripheral nervous system (strength, sensation, DTR)	Yes	By Age	No
Back & musculoskeletal system	Yes	By Age	No
Extremities	Yes	By Age	No
Cardiovascular system	Yes	By Age	No
Peripheral vascular system (Raynaud's)	Yes	By Age	No
Eyes	Yes	By Age	No
Abdomen	Yes	By Age	No
Genitourinary tract	Yes	By Age	No
Respiratory system	Yes	By Age	No
Ears (tympanic membranes)	Yes	By Age	No
Other appropriate examination (specify)	Yes	By Age	No
Comments on physical examination:	Yes	By Age	No
Is surveillance/PPE consistent with exposures	Yes	By Age	No
Are any abnormalities related to exposures/occupations	Yes	By Age	No
Recommendations:	Yes	By Age	No

*EKG/Lipid panel should be done once after age 40. The purpose of this program, as defined in Manual of the Medical Department (MANMED), is that medical examinations of explosive handlers and Hazardous Material Vehicle Operators are conducted to ensure employees who handle explosives or operate vehicles or machinery which transport explosive or other hazardous material are physically qualified. A separate program is for military members.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Civilian personnel must meet the general standards for employment as provided by the Office of Personnel Management and the standards for rejection listed in reference (2) above. Civilian contract carriers need only be qualified per Title 49, CFR, part 391.

REFERENCES:

1. 49 CFR, part 391;
2. Manual of the Medical Department, U.S. Navy, NAVMED P-117, Change 109.
3. DoD 4500.36-R, Management, Acquisition and Use of Motor Vehicles
(http://www.efdlant.navfac.navy.mil/lantop_16/temc.htm);
4. NAVFAC P-300, Management of Civil Engineering Support Equipment, May 97
(http://www.efdlant.navfac.navy.mil/lantops_16/temc.htm);
5. Marine Corps TM 11240-14/3B, Standard Licensing Procedures for Operators of Military Motor Vehicles;
6. Hartenbaum, N. The DOT Medical Examination, OEM Press, Boston, MA 1997.
7. A series of medical conferences on various diseases and commercial drivers were sponsored by DOT and the reports are available through National Technical Information Service (NTIS). Condensed versions of these reports are available over the Internet at <http://home.att.net/~NataH>

PROGRAM REVISED: 3/2000

FIREFIGHTER (ANNUAL HEALTH SCREEN)**722**

Program Frequency	Annual
EXAM ELEMENT	PERIODIC
Medical history: have you ever had:	
Personal history of:	
Is your work exposure history current (OPNAV 5100/15)	Annual
Major illness or injury	Annual
Hospitalization or surgery	Annual
Cancer	Annual
Back injury	Annual
Do you drink 6 or more drinks per week (beer, wine, liquor)	Annual
Have you ever smoked	Annual
Do you currently smoke (packs/day)	Annual
Heart disease, high blood pressure, or stroke	Annual
Current medication use (prescription or OTC)	Annual
Medication allergies	Annual
Any reproductive health concerns	Annual
Blood diseases (anemia)	Annual
Allergies (asthma, hay fever, eczema)	Annual
Skin disease	Annual
Heat injury (cramps, exhaustion, stroke)	Annual
Peripheral vascular disease	Annual
Hepatitis or jaundice	Annual
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Annual
Tuberculosis	Annual
Headache, dizziness, light-headedness, weakness	Annual
Change or loss of vision	Annual
Loss or change in hearing	Annual
Chest pain, angina, heart attack	Annual
Repeated episodes of loss of or near loss of consciousness	Annual
Shortness of breath	Annual
Chronic abdominal pain, vomiting, other GI symptoms	Annual
Current pregnancy (females only)	Annual
Epilepsy (seizure disorder)	Annual
Problems with balance & coordination	Annual
Problems with numbness, tingling, weakness in	Annual
Hands or feet	
Thyroid disease (heat or cold intolerance)	Annual
Mental/emotional illness	Annual
Muscle or joint problems	Annual
Work history of:	
Exposure to potentially infectious body fluids	Annual
Comments on medical history:	Annual
Laboratory:	
Additional lab tests:	

EXAM ELEMENT	PERIODIC
Tuberculosis screen	Annual
Optometry:	
Vision screen (visual acuity)	Annual
Color vision	Annual
Comments on laboratory results:	Annual
Physical examination:	
Vital signs	Annual
Height	Annual
Weight	Annual
Other appropriate examination (specify)	Annual
Comments on physical examination:	Annual
Special requirements:	
Qualifications:	
Current immunizations	Annual
Is hepatitis B vaccine series complete or prior infection documented?	Annual
Is surveillance/PPE consistent with exposures	Annual
Are any abnormalities related to exposures/occupations	Annual
Recommendations:	Annual

PROGRAM DESCRIPTION:**PROVIDER COMMENTS:**

Program 707 provides preplacement and periodic medical examination guidelines. Program 722 is used as an annual screen when the required periodic examination, Program 707, is not due. The extent of the medical evaluation and additional testing should be based on the firefighter's medical condition.

Reference (2) mandates the medical and physical criteria listed in references (3), (4) and (5). Reference (2) mandates that all personnel will participate in a physical fitness exercise program and shall be a special emphasis target group for DoD Components anti-smoking education programs.

REFERENCES:

1. Qualification Standards, Fire Protection and Prevention Series, GS-081, July 1993.
2. DODINST 6055.6 DoD Fire and Emergency Services Program, 15 DEC 94.
3. National Fire Fighters Protection Association, (NFPA) Standard on Fire Department Safety and Occupational Health (NFPA 1500), 1997 Edition.
4. NFPA Standard on Medical Requirements for Fire Fighters, (NFPA 1582), 1997 Edition.
5. NFPA Standard on Fire Department Infection Control Plan, (NFPA 1581), 1997 Edition.
6. OSHA Standard 29 CFR 1910.1030.
7. Orris, Peter, Melius, James and Duffy, RM, Occupational Medicine: State of the Air Review Firefighters' Safety and Health, Volume 10/Number 14, Hanley & Belfus, Inc., Philadelphia, PA.

References (2) and (4) contain conditions, by category, which are considered medically disqualifying. NOTE: The guidance in 5 CFR Part 339, "Medical Qualification Determinations", must be consulted on all civilian employees in whom there is a question of worker fitness. The presence of a medically disqualifying condition does not automatically preclude continued work. This decision should be made by management with input from Occupational Medicine, Human Resources Office and possibly the worker's personal physician.

Reference (6) considers public safety workers, policemen and Firefighters at risk for exposure to blood borne pathogens. This risk is not universal since duties vary greatly between departments and locations. The purpose of requiring assessment of hepatitis B immune status is to determine the extent of potential exposure. Those who are felt to be at risk may be placed in Program 178, Blood and/or Body Fluids.

PROGRAM REVIEWED 3/2000

FIREFIGHTER (PREPLACEMENT AND PERIODIC)

707

Program Frequency	By Age
29 and under	Every three years
30-39	Every two years
40 and over	Every year

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	By Age	***
Major illness or injury	Yes	By Age	***
Hospitalization or surgery	Yes	By Age	***
Cancer	Yes	By Age	***
Back injury	Yes	By Age	***
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	By Age	***
Have you ever smoked	Yes	By Age	***
Do you currently smoke (packs/day)	Yes	By Age	***
Heart disease, high blood pressure, or stroke	Yes	By Age	***
Current medication use (prescription or OTC)	Yes	By Age	***
Medication allergies	Yes	By Age	***
Any reproductive health concerns	Yes	By Age	***
Blood diseases (anemia)	Yes	By Age	***
Allergies (asthma, hay fever, eczema)	Yes	By Age	***
Skin disease	Yes	By Age	***
Heat injury (cramps, exhaustion, stroke)	Yes	By Age	***
Peripheral vascular disease	Yes	By Age	***
Hepatitis or jaundice	Yes	By Age	***
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	By Age	***
Tuberculosis	Yes	By Age	***
Headache, dizziness, light-headedness, weakness	Yes	By Age	***
Change or loss of vision	Yes	By Age	***
Loss or change in hearing	Yes	By Age	***
Chest pain, angina, heart attack	Yes	By Age	***
Repeated episodes of loss of or near loss of consciousness	Yes	By Age	***
Shortness of breath	Yes	By Age	***
Chronic abdominal pain, vomiting, other GI symptoms	Yes	By Age	***
Current pregnancy (females only)	Yes	By Age	***
Epilepsy (seizure disorder)	Yes	By Age	***
Problems with balance & coordination	Yes	By Age	***
Problems with numbness, tingling, weakness in hands or feet	Yes	By Age	***

EXAM ELEMENT	BASE	PERI	TERM
Thyroid disease (heat or cold intolerance)	Yes	By Age	***
Mental/emotional illness	Yes	By Age	***
Muscle or joint problems	Yes	By Age	***
Work history of:			
Exposure to potentially infectious body fluids	Yes	By Age	***
Comments on medical history:	Yes	By Age	***
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	By Age	***
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alkaline phosphatate	Yes	No	***
BUN and creatinine	Yes	By Age	***
Baseline lipid profile	Yes	No	No
SGOT (AST)	Yes	By Age	***
Urinalysis:			
Routine:			
Urinalysis without microscopic	Yes	By Age	***
Additional lab tests:			
Tuberculosis screen	Yes	Annual	***
EKG/lipid profile done once past age 40?	No	*	***
Cardiology:			
Baseline electrocardiogram	Yes	No	No
Audiology:			
Audiogram	Yes	By Age	***
Radiology:			
Chest x-ray (pa)	Yes	**	**
Spirometry:			
Spirometry (FVC, FEV1, FEV1/FVC)	Yes	By Age	***
Optometry:			
Vision screen (visual acuity)	Yes	By Age	***
Color vision	Yes	By Age	***
Peripheral vision	Yes	By Age	***
Comments on laboratory results:	Yes	By Age	***
Physical examination:			
Vital signs	Yes	By Age	***
Special attention in examination to:			
Central nervous system	Yes	By Age	***
Peripheral nervous system (strength, sensation, DTR)	Yes	By Age	***
Back & musculoskeletal system	Yes	By Age	***
Cardiovascular system	Yes	By Age	***
Eyes	Yes	By Age	***
Genitourinary tract	Yes	By Age	***
Liver	Yes	By Age	***
Respiratory system	Yes	By Age	***
Ears (tympanic membranes)	Yes	By Age	***

EXAM ELEMENT	BASE	PERI	TERM
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	By Age	***
Thyroid	Yes	By Age	***
Metabolic disturbance (fever, tachycardia)	Yes	By Age	***
Overall physical fitness	Yes	By Age	***
Other appropriate examination (specify)	Yes	By Age	***
Comments on physical examination:	Yes	By Age	***
Special requirements:			
Qualifications:			
Current immunizations	Yes	By Age	No
Is hepatitis b vaccine series complete or prior infection documented?	Yes	By Age	No
Is surveillance/PPE consistent with exposures	Yes	By Age	***
Are any abnormalities related to exposures/occupations	Yes	By Age	***
Recommendations:	Yes	By Age	***

* EKG/Lipid panel should be done once after age 40. The purpose of this program, as defined in Manual of the Medical Department (MANMED), is that medical examinations of explosive handlers and Hazardous Material Vehicle Operators are conducted to ensure employees who handle explosives or operate vehicles or machinery which transport explosive or other hazardous material are physically qualified. A separate program is for military members.

**Chest x-ray is not required and should be requested at the discretion of the provider.

***Workers who have not had an examination within 12 months should have a termination examination.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Program 707 provides guidelines for preplacement and periodic medical examinations. Program 722 provides guidelines for the annual medical evaluation, a medical screen to be done when the required periodic examination, Program 707, is not due. The extent of the medical evaluation and additional testing will depend on the firefighter’s medical condition.

Reference (2) mandates the medical and physical criteria listed in references (3), (4) and (5). Reference (2) mandates that all personnel will participate in a physical fitness exercise program and shall be a special emphasis target group for DoD Components anti-smoking education programs.

References (2) and (4) contain conditions, by category, which are considered medically disqualifying. NOTE: The guidance in 5 CFR Part 339, “Medical Qualification Determinations”, must be consulted on all civilian employees in whom there is a question of worker fitness. The presence of a medically disqualifying condition does not automatically preclude continued work. This decision should be made by management with input from Occupational Medicine, Human Resources Office and possibly the worker’s personal physician.

Reference (6) considers public safety workers, policemen and Firefighters at risk for exposure to blood borne pathogens. This risk is not universal since duties vary greatly between departments and locations. The purpose of requiring assessment of hepatitis B immune status is to determine the extent of potential exposure. Those who are felt to be at risk may be placed in Program 178, Blood and/or Body Fluids.

REFERENCE:

1. Qualification Standards, Fire Protection and Prevention Series, GS-081, July 1993.
- 2..DODINST 6055.6 DoD Fire and Emergency Services Program, 15 DEC 94.
3. National Fire Fighters Protection Association, (NFPA) Standard on Fire Department Safety and Occupational Health (NFPA 1500), 1997 Edition.
4. NFPA Standard on Medical Requirements for Fire Fighters, (NFPA 1582), 1997 Edition.
5. NFPA Standard on Fire Department Infection Control Plan, (NFPA 1581), 1997 Edition.
6. OSHA Standard 29 CFR 1910.1030.
7. Orris, Peter, Melius, James and Duffy, RM, Occupational Medicine: State of the Air Review Firefighters' Safety and Health, Volume 10/Number 14, Hanley & Beful, Inc., Philadelphia, PA.

PROGRAM REVIEWED 3/2000

FOODSERVICE PERSONNEL**709**

EXAM ELEMENT	Program Frequency		Preplacement	
	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Major illness or injury	Yes	No	No	
Hospitalization or surgery	Yes	No	No	
Cancer	Yes	No	No	
Back injury	Yes	No	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	No	No	
Have you ever smoked	Yes	No	No	
Do you currently smoke (packs/day)	Yes	No	No	
Heart disease, high blood pressure, or stroke	Yes	No	No	
Current medication use (prescription or OTC)	Yes	No	No	
Medication allergies	Yes	No	No	
Any reproductive health concerns	Yes	No	No	
Skin disease	Yes	No	No	
Hepatitis or jaundice	Yes	No	No	
Tuberculosis	Yes	No	No	
Infectious disease	Yes	No	No	
Chronic abdominal pain, vomiting, other GI symptoms	Yes	No	No	
Comments on medical history:	Yes	No	No	
Laboratory:				
Additional lab tests:				
Appropriate by the physician	Yes	No	No	
Comments on laboratory results:	Yes	No	No	
Physical examination:				
Vital signs	Yes	No	No	
Special attention in examination to:				
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	No	No	
Other appropriate examination (specify)	Yes	No	No	
Comments on physical examination:	Yes	No	No	
Certifications performed IAW:				
Navmed p-5010	Yes	No	No	
Assessment:	Yes	No	No	
Recommendations:	Yes	No	No	

PROGRAM DESCRIPTION:

This program is required for preplacement exam. There is no requirement for a periodic examination.

The choice of additional examination elements and laboratory tests should be determined locally, based on Public Health regulations, if applicable. Individual considerations such as communicable disease risk in the community and medical and social history of the

employee may affect the content of the exam. The concern is to avoid food-borne disease outbreaks. The focus of the exam is to identify potentially communicable conditions.

REFERENCES:

1. 132200Z DEC 89;
2. Manual of Naval Preventive Medicine NAVMED P-5010

PROGRAM REVISED: 3/2000

FORKLIFT OPERATOR

710

EXAM ELEMENT	Program Frequency	Triennial		
	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Trienn	No	
Major illness or injury	Yes	Trienn	No	
Hospitalization or surgery	Yes	Trienn	No	
Cancer	Yes	Trienn	No	
Back injury	Yes	Trienn	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Trienn	No	
Have you ever smoked	Yes	Trienn	No	
Do you currently smoke (packs/day)	Yes	Trienn	No	
Heart disease, high blood pressure, or stroke	Yes	Trienn	No	
Current medication use (prescription or OTC)	Yes	Trienn	No	
Medication allergies	Yes	Trienn	No	
Any reproductive health concerns	Yes	Trienn	No	
Headache, dizziness, light-headedness, weakness	Yes	Trienn	No	
Head injury	Yes	Trienn	No	
Change or loss of vision	Yes	Trienn	No	
Loss or change in hearing	Yes	Trienn	No	
Chest pain, angina, heart attack	Yes	Trienn	No	
Repeated episodes of loss of or near loss of consciousness	Yes	Trienn	No	
Epilepsy (seizure disorder)	Yes	Trienn	No	
Problems with balance and coordination	Yes	Trienn	No	
Problems with numbness, tingling, weakness in hands or feet	Yes	Trienn	No	
Diabetes or other endocrine gland disorder	Yes	Trienn	No	
Mental/emotional illness	Yes	Trienn	No	
Depression, diff concentrating, excessive anxiety	Yes	Trienn	No	
Personality change	Yes	Trienn	No	
Comments on medical history:	Yes	Trienn	No	
Laboratory:				
Serum chemistry:				
Baseline lipid profile	Yes	No	No	
Additional lab tests:				
EKG/lipid profile done once past age 40?	Yes	*	No	
Cardiology:				
Baseline electrocardiogram	Yes	No	No	
Audiology:				
Audiogram	Yes	Trienn	No	
Optometry				

EXAM ELEMENT	BASE	PERI	TERM
Vision screen (visual acuity)	Yes	Trienn	No
Color vision	Yes	Trienn	No
Depth perception	Yes	Trienn	No
Visual fields	Yes	Trienn	No
Comments on laboratory results:	Yes	Trienn	No
Physical examination:			
Required when positive history questions are obtained:			
Vital signs	Yes	Trienn	No
Special attention in examination to:			
Central nervous system	Yes	Trienn	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Trienn	No
Back & musculoskeletal system	Yes	Trienn	No
Cardiovascular system	Yes	Trienn	No
Eyes	Yes	Trienn	No
Ears (tympanic membranes)	Yes	Trienn	No
Other appropriate examination (specify)	Yes	Trienn	No
Comments on physical examination:	Yes	Trienn	No
Is surveillance/PPE consistent with exposures	Yes	Trienn	No
Are any abnormalities related to exposures/occupations	Yes	Trienn	No
Recommendations:	Yes	Trienn	No

*EKG/Lipid panel should be done once after age 40.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

Civilian workers who operate MHE for handling ammunition and explosives must be examined under Program #720, Explosive Handler and Explosive Operators (Civilian).

REFERENCES:

1. NAVSEA SW023-AH-WHM-010, Chapter 3;
2. DoD 4145.19R-1 (NOTE: These references are used by PWC to qualify Materials Handlers Operators.)

PROGRAM REVIEWED: 3/2000

FREON WORKERS**718**

STRESSOR(S) IN THIS PROGRAM:	NIOSH #	CAS #	
1,1,2-trichloro-1,2,2,-trifluoroethane (freon - 113)	KJ4000000	76-13-1	
Program Frequency		Annual	
EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	No
Major illness or injury	Yes	Annual	No
Hospitalization or surgery	Yes	Annual	No
Cancer	Yes	Annual	No
Back injury	Yes	Annual	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	No
Have you ever smoked	Yes	Annual	No
Do you currently smoke (packs/day)	Yes	Annual	No
Heart disease, high blood pressure, or stroke	Yes	Annual	No
Current medication use (prescription or OTC)	Yes	Annual	No
Medication allergies	Yes	Annual	No
Any reproductive health concerns	Yes	Annual	No
Skin disease	Yes	Annual	No
Chest pain, angina, heart attack	Yes	Annual	No
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	No
Shortness of breath	Yes	Annual	No
Comments on medical history:	Yes	Annual	No
Physical examination			
Vital signs	Yes	Annual	No
Special attention in examination to:			
Central nervous system	Yes	Annual	No
Cardiovascular system	Yes	Annual	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	No
Other appropriate examination (specify)	Yes	Annual	No
Comments on physical examination:	Yes	Annual	No
Is surveillance/PPE consistent with exposures	Yes	Annual	No
Are any abnormalities related to exposures/occupations	Yes	Annual	No
Recommendations:	Yes	Annual	No

PROGRAM DESCRIPTION:

Workers exposed to FC-113 at or above the action level, i.e., one half or more of the permissible exposure limits (8-hour TWA) for more than 30 days a year or 10 days a quarter, should be placed in a medical surveillance program and scheduled for annual examinations.

Workers should have a preplacement examination if they do not fit the criteria for

placement in the medical surveillance program but have potential exposure to FC-113 above the Short Term Exposure Limit (STEL).

PROVIDER COMMENTS:

A limited number of freons have cardiac sensitizing effects. Interval history should stress intake of oral medications with cardiac sensitizing effects (epinephrine, norepinephrine, dopamine, isoproterenol and other sympathomimetic drugs used by asthmatics).

REFERENCES:

1. Commander, Naval Sea Systems Command letter, 4734/9210 Ser 06C13C/1117 of 29 Oct 85;
2. Federal Register 54 FR 2539-2541 Jan 19, 1989;
3. [Occupational Medical Surveillance Manual, DoD 6055.5-M,](https://www.denix.osd.mil/denix/Public/ESPrograms/Safety/Documents/6055.5/manual.html#c2)
<https://www.denix.osd.mil/denix/Public/ESPrograms/Safety/Documents/6055.5/manual.html#c2>

PROGRAM REVISED: Oct 2006, COL Laura Torres-Reyes

HAZARDOUS WASTE WORKERS AND EMERGENCY RESPONDERS**711**

	Program Frequency	Annual		
EXAM ELEMENT	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Annual	Yes	
Major illness or injury	Yes	Annual	Yes	
Hospitalization or surgery	Yes	Annual	Yes	
Cancer	Yes	Annual	Yes	
Back injury	Yes	Annual	Yes	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Annual	Yes	
Have you ever smoked	Yes	Annual	Yes	
Do you currently smoke (packs/day)	Yes	Annual	Yes	
Heart disease, high blood pressure, or stroke	Yes	Annual	Yes	
Current medication use (prescription or OTC)	Yes	Annual	Yes	
Medication allergies	Yes	Annual	Yes	
Any reproductive health concerns	Yes	Annual	Yes	
Allergies (asthma, hay fever, eczema)	Yes	Annual	Yes	
Skin disease	Yes	Annual	Yes	
Heat injury (cramps, exhaustion, stroke)	Yes	Annual	Yes	
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Annual	Yes	
Headache, dizziness, light-headedness, weakness	Yes	Annual	Yes	
Cold injury(frostbite, chill, trench ft, hypothermia)	Yes	Annual	Yes	
Change or loss of vision	Yes	Annual	Yes	
Loss or change in hearing	Yes	Annual	Yes	
Chest pain, angina, heart attack	Yes	Annual	Yes	
Repeated episodes of loss of or near loss of consciousness	Yes	Annual	Yes	
Shortness of breath	Yes	Annual	Yes	
Current pregnancy (females only)	Yes	Annual	Yes	
Epilepsy (seizure disorder)	Yes	Annual	Yes	
Problems with balance and coordination	Yes	Annual	Yes	
Problems with numbness, tingling, weakness in hands or feet	Yes	Annual	Yes	
Thyroid disease (heat or cold intolerance)	Yes	Annual	Yes	
Mental/emotional illness	Yes	Annual	Yes	
Work history of:				
Exposure to skin irritants	Yes	Annual	Yes	
Exposure to respiratory irritants	Yes	Annual	Yes	
Exposure to carcinogens	Yes	Annual	Yes	
Comments on medical history:	Yes	Annual	Yes	
Laboratory				

EXAM ELEMENT	BASE	PERI	TERM
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	Annual	Yes
Differential white blood cell count	Yes	Annual	Yes
Serum chemistry:			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alk. Phos	Yes	No	Yes
Baseline lipid profile	Yes	No	No
BUN and creatinine	Yes	Annual	Yes
SGOT (AST)	Yes	*	Yes
Additional lab tests:			
EKG/lipid profile done once past age 40?	Yes	**	Yes
Cardiology:			
Baseline electrocardiogram	Yes	No	No
Audiology:			
Audiogram	Yes	Annual	Yes
Radiology:			
Chest x-ray (pa)	Yes	No	Yes
Spirometry:			
Spirometry (FEV1, FVC, FEV1/FVC)	Yes	Annual	Yes
Optometry:			
Vision screen (visual acuity)	Yes	Annual	Yes
Color vision	Yes	Annual	Yes
Comments on laboratory results:	Yes	Annual	Yes
Physical examination:			
Vital signs	Yes	Annual	Yes
Special attention in examination to:			
Central nervous system	Yes	Annual	Yes
Peripheral nervous system (strength, sensation, DTR)	Yes	Annual	Yes
Back & musculoskeletal system	Yes	Annual	Yes
Cardiovascular system	Yes	Annual	Yes
Eyes	Yes	Annual	Yes
Respiratory system	Yes	Annual	Yes
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	Annual	Yes
Thyroid	Yes	Annual	Yes
Metabolic disturbance (fever, tachycardia)	Yes	Annual	Yes
Obesity	Yes	Annual	Yes
Overall physical fitness	Yes	Annual	Yes
Other appropriate examination (specify)	Yes	Annual	Yes
Comments on physical examination:	Yes	Annual	Yes
Special notations:			
Physician's/provider's written opinion required	Yes	Annual	Yes
Is surveillance/PPE consistent with exposures	Yes	Annual	Yes
Are any abnormalities related to exposures/occupations	Yes	Annual	Yes
Recommendations:	Yes	Annual	Yes

*SGOT for baseline is included in baseline liver profile. Only SGOT is required on annual basis.

**EKG/Lipid panel should be done once after age 40.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

29 CFR 1910.120 establishes minimal medical surveillance for personnel who are or may be exposed to hazardous substances at or above the PEL for 30 days per year, wear a respirator 30 days per year, or sustain an overexposure incident involving hazardous substances. CFR requires an annual exam unless the attending physician feels longer intervals are appropriate. Under no circumstances should the frequency be less than every two years. A sample Physician's/provider's Written Opinion, required by OSHA, can be found in [C11.2, Physician's/Provider's Written Opinion Samples](#).

REFERENCES:

1. 29 CFR 1910.120.
2. OSHA STANDARD 29 CFR 1910.120

PROGRAM REVISED: 10/97.

HEALTH CARE WORKERS (HCWS)

719

EXAM ELEMENT	Program Frequency		Baseline
	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	No	**
Major illness or injury	Yes	No	**
Hospitalization or surgery	Yes	No	**
Cancer	Yes	No	**
Back injury	Yes	No	**
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	No	**
Have you ever smoked	Yes	No	**
Do you currently smoke (packs/day)	Yes	No	**
Heart disease, high blood pressure, or stroke	Yes	No	**
Current medication use (prescription or OTC)	Yes	No	**
Medication allergies	Yes	No	**
Any reproductive health concerns	Yes	No	**
Allergies (asthma, hay fever, eczema)	Yes	No	**
Have you ever been evaluated for latex allergy	Yes	No	**
Skin disease	Yes	No	**
Recurrent skin rash	Yes	No	**
Tuberculosis	Yes	No	**
Hepatitis or jaundice	Yes	No	**
History of chicken pox	Yes	No	**
Current pregnancy (self or spouse)	Yes	No	**
Infertility or miscarriage (self or spouse)	Yes	No	**
Adverse reaction to eating any vegetable or fruit	Yes	No	**
Adverse reaction to any rubber/latex containing product	Yes	No	**
Multiple operations or chronic medical instrumentation	Yes	No	**
Unexplained hives or symptoms of shock	Yes	No	**
Itchy eyes, runny nose, respiratory symptoms when using latex gloves	Yes	No	**
Work history of:			
Exposure to chemotherapeutic/antineoplastic agents	Yes	No	**
Exposure to aerosolized antibiotics/antivirals	Yes	No	**
Exposure to anesthetic gases	Yes	No	**
Exposure to ethylene oxide	Yes	No	**
Exposure to ionizing radiation	Yes	No	**
Exposure to non-ionizing radiation (laser, IR, mw, UV)	Yes	No	**
Exposure to potentially infectious body fluids	Yes	No	**

EXAM ELEMENT	BASE	PERI	TERM
Exposure to formaldehyde	Yes	No	**
Regular contact with latex gloves or other Rubber products?	Yes	No	**
Comments on medical history:	Yes	No	**
Laboratory:			
Additional lab tests:			
Tuberculosis screen	Yes	Annual	No
Comments on laboratory results:	Yes	Annual	No
Physical examination:			
Vital signs	Yes	No	**
Other appropriate examination (specify)	Yes	No	**
Comments on physical examination:	Yes	No	**
Qualifications:			
Current immunizations	Yes	*	**
Measles/mumps/rubella immune status	Yes	No	**
Varicella immune status	Yes	No	**
Is hepatitis B vaccine series complete or prior infection documented?	Yes	No	**
Is surveillance/PPE consistent with exposures	Yes	No	**
Are any abnormalities related to exposures/occupations	Yes	No	**
Recommendations:	Yes	No	**

*Annual PPD requirements and/or immunizations review drive the need to bring HCW to the clinic. Otherwise, there is no requirement for periodic evaluation.

**A termination examination provides an opportunity to review the medical record and document any medical conditions and concerns. PROVIDER COMMENTS:

PROGRAM DESCRIPTION:

This program provides for a baseline review of immunization status and history.

A screening form for latex allergy is available in the Navy Environmental Health Center Occupational Medicine [Field Operations Manual](#).

The immunization requirements promulgated by the various references can be summarized as follows:

- A. Hepatitis B vaccine series is required for those medical and dental workers with exposure or potential exposure to blood or body fluids unless there is a contraindication. Those with exposure to blood and other infectious bodily fluids should be placed in Program 178.
- B. HCWs who have no history of varicella or serologic evidence of immunity should be counseled to report varicella exposure to the clinic since patient care restrictions may be appropriate 8 - 21 days after exposure. Those HCWs who work in patient care and have not had varicella should have varicella antibody measured.
- C. Immunizations against tetanus, diphtheria and pertussis (Tdap) should be current.
- D. Immunity to varicella, measles, mumps and rubella is required. This requirement can be met by documentation of physician-diagnosed illness (except rubella), serologic evidence of

immunity, or documented immunization (for measles, 2 doses 1 month apart after 1 year of age in individuals born in or after 1957 is required).

- E. It is reasonable to obtain rubella antibody titer for females of child-bearing age as part of the pre-employment exam.
- F. Specific requirements are contained in the instructions listed in the program description.
- G. Guidance on periodic screening and the booster phenomenon is covered in reference (3).
- H. Annual influenza immunization for HCWs is recommended.

There is no specific exam required. The content of the exam and assignment to specific stressors are determined by review of responses to history questions and further interview of the worker as deemed appropriate. Health care workers are potentially exposed to a wide variety of chemical, physical and biologic agents. These exposures may change over time. Annual update of work exposures allows for adjustment of exposure programs as appropriate.

REFERENCES:

1. OSHA Standard 1910.1030;
2. NIOSH, Guidelines for prevention of transmission of human immunodeficiency virus and hepatitis B virus to health-care and public-safety workers, 1989, DHHS (NIOSH) Pub. No. 89-107, US Government Printing Office, Washington, D.C.;
3. Center for Disease Control and Prevention Morbidity and Mortality Weekly Report "Guidelines for Preventing the Transmission of Mycobacterium Tuberculosis in Healthcare Facilities, 28 Oct 1994, Volume 43, No. RR-13;
4. McDiarmid MA, Kessler, ER, The Health Care Worker, Occupational Medicine State of the Art Reviews, Vol. 12/Number 4, Oct-Dec 1997, Hanley & Belfus, Inc.;
5. NIOSH alert, Preventing Allergic Reactions to Natural Rubber Latex in the Workplace, June 1997, DHHS (NIOSH) Publication No. 97-135 (<http://www.cdc.gov/niosh/latexalt.html>)
6. [Preventing Tetanus, Diphtheria, and Pertussis Among Adults](#): Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine, Recommendations of the Advisory Committee on Immunization Practices (ACIP) and Recommendation of ACIP, supported by the Healthcare Infection Control Practices Advisory Committee (HICPAC), for Use of Tdap Among Health-Care Personnel; MMWR: December 15, 2006 / 55(RR17);1-33.

PROGRAM REVISED: 10/97.

MILITARY DOT, EXPLOSIVE HANDLER/VEHICLE OPERATORS (INTERIM EXAMINATION)

721

Program Frequency

By Age

Active duty military personnel who are explosive handlers or hazardous material vehicle operators will have a medical examination per the periodicity in MANMED, article 15-11.

EXAM ELEMENT	BASELINE
Medical history: have you ever had:	
Is your work exposure history current (OPNAV 5100/15)	***
Since last SF 88/93 physical have you had?	***
Major illness or injury	***
Hospitalization or surgery	***
Cancer	***
Back injury	***
Do you drink 6 or more drinks per week	***
Have you ever smoked	***
Do you currently smoke (packs/day)	***
Heart disease, high blood pressure, or stroke	***
Current medication use (prescription or OTC)	***
Medication allergies	***
Use of seat belts (always, mostly, some, none)	***
Any reproductive health concerns	***
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	***
Syphilis or gonorrhea	***
Headache, dizziness, light-headedness, weakness	***
Nervous stomach or ulcer	***
Head injury	***
Change or loss of vision	***
Loss or change in hearing	***
Chest pain, angina, heart attack	***
Repeated episodes of loss of or near loss of consciousness	***
Kidney disease	***
Epilepsy (seizure disorder)	***
Problems with balance and coordination	***
Problems with numbness, tingling, weakness in hands or feet	***
Migraine headache	***
Diabetes or other endocrine gland disorder	***
Mental/emotional illness	***
Depression, diff concentrating, excessive anxiety	***
Treatment for drug or alcohol use	***
Personality change	***
Muscle or joint problems	***
Permanent defect from illness, disease or injury	***
Family history of:	***
Heart disease, high blood pressure, or stroke	***

EXAM ELEMENT	BASELINE
Comments on medical history:	***
Physical examination:	
Vital signs	***
Comments on physical examination:	***
Is surveillance/PPE consistent with exposures	***
Are any abnormalities related to exposures/occupations	***
SF 88/93 reviewed and found complete	***
Recommendations:	***
<p>*** At least once every 4 years, each agency will ensure that employees who operate Government-owned or leased vehicles are medically able to do so without undue risk to themselves or others. When there is a question about an employee's ability to operate a motor vehicle safely, the employee may be referred for a medical examination in accordance with the provisions of 5 CFR Part 339, Medical Qualification Determinations. EKG/Lipid profile should be done once after age 40.</p>	

PROGRAM DESCRIPTION:

Medical examinations of explosive handlers and Hazardous Material Vehicle Operators are conducted to ensure active duty personnel who handle explosives or operate vehicles or machinery which transport explosive or other hazardous material are physically qualified. This program is designed to provide a screen at an interim basis when the required periodic examination is not due. This program is used to review interim history, document vital signs, document that the SF 88 and SF 93 from the most recent examination were reviewed, and certification based on the review of a current periodic physical examination. If a complete physical examination is required, the SF 88 and SF 93 should be used for documentation following the requirements of MANMED.

Military personnel are exempt from the requirements of the Commercial Motor Vehicle Safety Act of 1986, and, in particular, from the requirements of 49 CFR Part 383 regarding physical examination requirements in order to obtain a commercial drivers license. The scope of the periodic examinations is considered sufficient to meet the requirements. (This would apply to the less demanding physical requirements for MVO and Forklift Driver.) The periodicity of examinations for active duty and reserve military personnel is outlined in the MANMED. Active duty members must meet the standards of MANMED, chapter 15, section III, with particular emphasis on the systems listed in that section. Navy Explosive Ordnance Disposal personnel must also meet the requirements of article 15-66.

REFERENCES: (OTHER);

1. Manual of the Medical Department, U.S. Navy, NAVMED P-117, Change 109.
2. Marine Corps TM 11240-14/3B, Standard Licensing Procedures for Operators of Military Motor Vehicles;
3. DoD 4500.36-R, Management, Acquisition and Use of Motor Vehicles
(http://www.efdlant.navy.mil/lantops_16/temc.htm);
4. NAVFAC P-300, Management of Civil Engineering Support Equipment, May 97
(http://www.efdlant.navy.mil/lantops_16/temc.htm);

5. Hartenbaum, N. The DOT Medical Examination, OEM Press, Boston, MA 1997.
- PROGRAM REVISED 3/2000

MOTOR VEHICLE OPERATOR (OTHER THAN DOT)

712

EXAM ELEMENT	Program Frequency		By Age	
	BASE	PERI	TERM	
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	***	No	
Major illness or injury	Yes	***	No	
Hospitalization or surgery	Yes	***	No	
Cancer	Yes	***	No	
Back injury	Yes	***	No	
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	***	No	
Have you ever smoked	Yes	***	No	
Do you currently smoke (packs/day)	Yes	***	No	
Heart disease, high blood pressure, or stroke	Yes	***	No	
Current medication use (prescription or OTC)	Yes	***	No	
Medication allergies	Yes	***	No	
Use of seat belts (always, mostly, some, none)	Yes	***	No	
Any reproductive health concerns	Yes	***	No	
Headache, dizziness, light-headedness, weakness	Yes	***	No	
Head injury	Yes	***	No	
Change or loss of vision	Yes	***	No	
Loss or change in hearing	Yes	***	No	
Chest pain, angina, heart attack	Yes	***	No	
Repeated episodes of loss of or near loss of consciousness	Yes	***	No	
Epilepsy (seizure disorder)	Yes	***	No	
Problems with balance and coordination	Yes	***	No	
Problems with numbness, tingling, weakness in hands or feet	Yes	***	No	
Diabetes or other endocrine gland disorder	Yes	***	No	
Mental/emotional illness	Yes	***	No	
Depression, diff concentrating, excessive anxiety	Yes	***	No	
Personality change	Yes	***	No	
Comments on medical history:	Yes	***	No	
Laboratory:				
Serum chemistry:				
Baseline lipid profile	Yes	No	No	
Urinalysis:				
Routine:				
Urinalysis with microscopic	Yes	***	No	
Additional lab tests:				
EKG/lipid profile done once past age 40?	Yes	***	No	
Cardiology:				

EXAM ELEMENT	BASE	PERI	TERM
Baseline electrocardiogram	Yes	No	No
Audiology:			
Audiogram	Yes	***	No
Optometry:			
Vision screen (visual acuity)	Yes	***	No
Visual fields	Yes	***	No
Comments on laboratory results:	Yes	***	No
Physical examination:			
Required when positive history questions are obtained:			
Vital signs	Yes	***	No
Special attention in examination to:			
Central nervous system	Yes	***	No
Peripheral nervous system (strength, sensation, DTR)	Yes	***	No
Back & musculoskeletal system	Yes	***	No
Cardiovascular system	Yes	***	No
Eyes	Yes	***	No
Ears (tympanic membranes)	Yes	***	No
Other appropriate examination (specify)	Yes	***	No
Comments on physical examination:	Yes	***	No
Is surveillance/PPE consistent with exposures	Yes	***	No
Are any abnormalities related to exposures/occupations	Yes	***	No
Recommendations:	Yes	***	No

***At least once every 4 years, each agency will ensure that employees who operate Government-owned or leased vehicles are medically able to do so without undue risk to themselves or others. When there is a question about an employee's ability to operate a motor vehicle safely, the employee may be referred for a medical examination in accordance with the provisions of 5 CFR Part 339, Medical Qualification Determinations. EKG/Lipid profile should be done once after age 40.

PROGRAM DESCRIPTION:

Form OF 345, Physical Fitness Inquiry for Motor Vehicle Operators, is used by licensing examiners to screen health status.

This program, #712, can be used to meet local requirements for performing periodic medical examinations when requested.

PROVIDER COMMENTS:

Guidelines for examinations for interstate driving and any driver covered by Federal Motor Carrier Safety regulations, 49 CFR 391.41-49, Subpart E, are contained in Program #706.

REFERENCES:

1. 5 CFR Part 930.108, Subpart A-Motor Vehicle Operators;
2. 5 CFR Part 339;
3. DoD 4500.36-R, Management, Acquisition and Use of Motor Vehicles (http://www.efdlant.navy.mil/lantops_16/temc.htm);

4. NAVFAC P-300, Management of Civil Engineering Support Equipment, May 97
(http://www.efdlant.navfac.navy.mil/lantops_16/temc.htm);
5. Marine Corps TM 11240-14/3B, Standard Licensing Procedures for Operators of Military Motor Vehicles.

PROGRAM REVISED: 10/97.

NAVAL CRIMINAL INVESTIGATIVE SERVICE

713

Program Frequency	By Age
Up to 37 years	Triennial
Age 38 to 40 years	Biennial
Age 41 and over	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	By Age	No
Major illness or injury	Yes	By Age	No
Hospitalization or surgery	Yes	By Age	No
Cancer	Yes	By Age	No
Back injury	Yes	By Age	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	By Age	No
Have you ever smoked	Yes	By Age	No
Do you currently smoke (packs/day)	Yes	By Age	No
Heart disease, high blood pressure, or stroke	Yes	By Age	No
Current medication use (prescription or OTC)	Yes	By Age	No
Medication allergies	Yes	By Age	No
Any reproductive health concerns	Yes	By Age	No
Heart disease, high blood pressure or stroke	Yes	By Age	No
Tuberculosis	Yes	By Age	No
Communicable disease	Yes	By Age	No
Nervous stomach or ulcer	Yes	By Age	No
Loss or change in hearing	Yes	By Age	No
Epilepsy (seizure disorder)	Yes	By Age	No
Mental/emotional illness	Yes	By Age	No
Permanent defect from illness, disease or injury	Yes	No	No
Comments on medical history:	Yes	By Age	No
Laboratory:			
Hematology:			
Complete blood count (HGB, HCT, WBC, MCV, MCH, MCHC)	Yes	By Age	No
Serum chemistry:			
Basic profile to include:			
BUN, creatinine, uric acid, calcium,	Yes	By Age	No
Total Bilirubin, alk. Phos, SGOT (AST)			
Liver profile to include:			
SGOT (AST), Total Bilirubin, alk. Phos	Yes	By Age	No
Cholesterol	Yes	By Age	No
Triglycerides	Yes	By Age	No
Urinalysis:			
Routine:			

EXAM ELEMENT	BASE	PERI	TERM
Urinalysis with microscopic	Yes	By Age	No
Cardiology:			
Electrocardiogram	Yes	***	No
Audiology:			
Audiogram	Yes	By Age	No
Radiology			
Chest x-ray (pa)	Yes	No	No
Optometry:			
Vision screen (visual acuity)	Yes	By Age	No
Color vision	Yes	By Age	No
Depth Perception	Yes	By Age	No
Comments on laboratory results:	Yes	By Age	No
Physical examination:			
Vital signs	Yes	By Age	No
Other appropriate examination (specify)	Yes	By Age	No
Comments on physical examination:	Yes	By Age	No
Certifications performed IAW:			
NCIS manual for administration	Yes	By Age	No
Review of functional/environmental requirements of SF 78	Yes	By Age	No
Is surveillance/PPE consistent with exposures	Yes	By Age	No
Are any abnormalities related to exposures/occupations	Yes	By Age	No
Recommendations:	Yes	By Age	No

***The EKG is given every 5 years beginning at age 35.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

OSHA Regulation 1910.1030 considers public safety workers, including both policemen and firefighters at risk for exposure to blood borne pathogens. This risk is not universal since duties of public safety workers vary greatly between departments and locations. The purpose of the requirement for assessment of hepatitis B immune status is to determine for the individual the extent of potential exposure. Those who are felt to be at significant risk may be placed in Program 178, Blood and/or Body Fluids.

Weight certification is required for NCIS agents. Weight certification is accomplished by completing the weight range chart (addendum 2, NCIS-1, Chapter 13) provided with the SF 78 at each examination and annually.

PC Matrix is an acceptable form for this examination. Original forms are submitted for headquarters review. A copy of the examination should be kept in a health record. Certificate of Medical Examination, SF 78, is used for preplacement examinations.

REFERENCES:

1. NCIS Administrative Manual, NCIS-1, Chapter 13.
2. OSHA Standard 1910.1030.

PROGRAM REVIEWED: 1/98.

POLICE/GUARD SECURITY

714

Program Frequency	By Age
Up to 34 years	Every five years
35 to 44 years	Biennial
45+ years	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	By Age	No
Major illness or injury	Yes	By Age	No
Hospitalization or surgery	Yes	By Age	No
Cancer	Yes	By Age	No
Back injury	Yes	By Age	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	By Age	No
Have you ever smoked	Yes	By Age	No
Do you currently smoke (packs/day)	Yes	By Age	No
Heart disease, high blood pressure, or stroke	Yes	By Age	No
Current medication use (prescription or OTC)	Yes	By Age	No
Medication allergies	Yes	By Age	No
Any reproductive health concerns	Yes	By Age	No
Headache, dizziness, light-headedness, weakness	Yes	By Age	No
Change or loss of vision	Yes	By Age	No
Loss or change in hearing	Yes	By Age	No
Chest pain, angina, heart attack	Yes	By Age	No
Repeated episodes of loss of or near loss of consciousness	Yes	By Age	No
Shortness of breath	Yes	By Age	No
Epilepsy (seizure disorder)	Yes	By Age	No
Problems with balance and coordination	Yes	By Age	No
Problems with numbness, tingling, weakness in hands or feet	Yes	By Age	No
Thyroid disease (heat or cold intolerance)	Yes	By Age	No
Diabetes or other endocrine gland disorder	Yes	By Age	No
Mental/emotional illness	Yes	By Age	No
Depression, diff concentrating, excessive anxiety	Yes	By Age	No
Personality change	Yes	By Age	No
Work history:			
Exposure to potentially infectious body fluids	Yes	By Age	No
Comments on medical history:	Yes	By Age	No
Laboratory:			
Serum chemistry:			
Basic profile to include:			
BUN, creatinine, uric acid, calcium,	Yes	By Age	No

EXAM ELEMENT	BASE	PERI	TERM
Total bilirubin, alkaline phosphatase, SGOT (AST)			
Baseline lipid profile	Yes	No	No
Urinalysis:			
Routine:			
Urinalysis with microscopic	Yes	By Age	No
Additional lab tests:			
EKG/lipid profile done once past age 40?	Yes	*	No
Cardiology:			
Baseline electrocardiogram	Yes	No	No
Audiology:			
Audiogram	Yes	By Age	No
Optometry:			
Vision screen (visual acuity)	Yes	By Age	No
Comments on laboratory results:	Yes	By Age	No
Physical examination:			
Vital signs	Yes	By Age	No
Special attention in examination to:			
Central nervous system	Yes	By Age	No
Peripheral nervous system (strength, sensation, DTR)	Yes	By Age	No
Back & musculoskeletal system	Yes	By Age	No
Cardiovascular system	Yes	By Age	No
Eyes	Yes	By Age	No
Respiratory system	Yes	By Age	No
Ears (tympanic membranes)	Yes	By Age	No
Skin-with regard to malignant & pre-malignant conditions	Yes	By Age	No
Thyroid	Yes	By Age	No
Metabolic disturbance (fever, tachycardia)	Yes	By Age	No
Overall physical fitness	Yes	By Age	No
Other appropriate examination (specify)	Yes	By Age	No
Comments on physical examination:	Yes	By Age	No
Qualifications:			
Current immunizations	Yes	By Age	No
Is hepatitis B series complete or prior infection documented?	Yes	By Age	No
Is surveillance/PPE consistent with exposures	Yes	By Age	No
Are any abnormalities related to exposures/occupations	Yes	By Age	No
Recommendations:	Yes	By Age	No

*EKG/Lipid profile should be done once after age 40.

PROGRAM DESCRIPTION:

PROVIDER COMMENTS:

OSHA Regulation considers public safety workers, including both policemen and firefighters, at risk for exposure to blood borne pathogens. This risk is not universal since duties of public safety workers vary greatly between departments and locations. The purpose of

the requirement for assessment of hepatitis B immune status is to determine for the individual the extent of potential exposure. Those who are felt to be at significant risk may be placed in Program 178, Blood and/or Body Fluids.

Local activities may have more stringent examination and frequency requirements. If local requirements are more stringent, the medical clinic should keep a copy of written requirements for additional tests.

Tetanus immunization should be kept current.

REFERENCES:

1. OSHA Standard 1910.1030;
2. 5 CFR 930;
3. X-118 Series GS-083.
4. OPM Qualification Standards for General Schedule Positions.

<http://www.opm.gov/qualifications/sec-iv/b/qs0000/0083.htm>

<http://www.opm.gov/qualifications.sec-iv/b/qs0000/0085.htm>

PROGRAM REVIEWED: 3/2000

RESPIRATOR USER CERTIFICATION EXAM

716

Program Frequency	By Age
15 to 34 years	Every five years
35 to 44 years	Every two years
45+ years	Annual

EXAM ELEMENT	BASE	PERI	TERM
Medical history: have you ever had:			
Personal history of:			
Is your work exposure history current (OPNAV 5100/15)	Yes	By Age	No
Major illness or injury	Yes	By Age	No
Hospitalization or surgery	Yes	By Age	No
Cancer	Yes	By Age	No
Back injury	Yes	By Age	No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	By Age	No
Have you ever smoked	Yes	By Age	No
Do you currently smoke (packs/day)	Yes	By Age	No
Heart disease, high blood pressure, or stroke	Yes	By Age	No
Current medication use (prescription or OTC)	Yes	By Age	No
Medication allergies	Yes	By Age	No
Any reproductive health concerns	Yes	By Age	No
Allergies (asthma, hay fever, eczema)	Yes	By Age	No
Skin disease	Yes	By Age	No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	By Age	No
Wheezing	Yes	By Age	No
Tuberculosis	Yes	By Age	No
Use of eye glasses	Yes	By Age	No
Contact lens use	Yes	By Age	No
Loss of vision in either eye	Yes	By Age	No
Color blindness	Yes	By Age	No
Eye irritation	Yes	By Age	No
Any other eye or vision problem	Yes	By Age	No
Inability to smell	Yes	By Age	No
Any injury to your ears	Yes	By Age	No
Ruptured ear drum	Yes	By Age	No
Loss or change in hearing	Yes	By Age	No
A need to wear a hearing aid	Yes	By Age	No
Any other hearing or ear problem	Yes	By Age	No
Chest pain, angina, heart attack	Yes	By Age	No
Repeated episodes of loss of or near loss of consciousness	Yes	By Age	No
Frequent pain or tightness in your chest	Yes	By Age	No
Swelling in legs or feet (not caused by walking)	Yes	By Age	No

EXAM ELEMENT	BASE	PERI	TERM
Any other heart problem you've been told about	Yes	By Age	No
Shortness of breath	Yes	By Age	No
Cough (dry or productive)	Yes	By Age	No
Current pregnancy (females only)	Yes	By Age	No
Epilepsy (seizure disorder)	Yes	By Age	No
Problems with balance and coordination	Yes	By Age	No
Problems with numbness, tingling, weakness in hands or feet	Yes	By Age	No
Diabetes or other endocrine gland disorder	Yes	By Age	No
Mental/emotional illness	Yes	By Age	No
Claustrophobia	Yes	By Age	No
Muscle or joint problems	Yes	By Age	No
Any other muscle or skeletal problem that may interfere with using a respirator	Yes	By Age	No
Work history of:			
Prior respirator use	Yes	By Age	No
If yes, any problems that interfered with use	Yes	By Age	No
Comments on medical history:	Yes	By Age	No
Physical examination:			
Vital signs	Yes	By Age	No
Height	Yes	By Age	No
Weight	Yes	By Age	No
Special attention in examination to:			
Cardiovascular system	Yes	By Age	No
Eyes	Yes	By Age	No
Respiratory system	Yes	By Age	No
Ears (tympanic membranes)	Yes	By Age	No
Skin (rash, erosion, ulcer, pigment, eczema, etc)	Yes	By Age	No
Other appropriate examination (specify)	Yes	By Age	No
Comments on physical examination:	Yes	By Age	No
Is surveillance/PPE consistent with exposures	Yes	By Age	No
Are any abnormalities related to exposures/occupations	Yes	By Age	No
Recommendations:	Yes	By Age	No

PROGRAM DESCRIPTION:
PROVIDER COMMENTS:

Spirometry and chest x-rays are not routinely required. They are not recommended solely as data to determine if a respirator should be worn, but may be medically indicated in some cases when additional information is needed to determine fitness. (2) Workers who wear respirators may receive spirometry and chest x-rays as part of surveillance requirements for specific hazards.

REFERENCES:

1. OSHA Standard [29 CFR 1910.134](#);
2. ANSI Standard Z88.2-1980, Practices for Respiratory Protection;

3. NIOSH Respirator Decision Logic, U.S. Department of Health and Human Services, DHHS (NIOSH) Pub. No. 87-108;
4. [OPNAVINST 5100.23](#) (series), Chapter 15;
5. [OPNAVINST 5100.19](#) (series), Chapter B6;
6. OPNAVINST 6000.1A MANAGEMENT OF PREGNANT SERVICEWOMEN.
7. American Thoracic Society, Respiratory Protection Guidelines, American Journal of Respiratory Critical Care Medicine, Vol. 154. pp 1153-1165, 1996;
8. Navy Environmental Health Center (NEHC) A Guide for Respiratory Protection Program Managers, NEHC TM-96-1, 1996.

PROGRAM REVIEWED: 3/2000

SUBMARINE DUTY**717**

Program Frequency For Active Duty accessions to submarine duty or submarine qualified: upon initial application and subsequently every 5 years.
For Non-submarine Qualified Military, all civilians, governmental and contractor employees, and military dependents: prior to embarkation on a submarine.

PROGRAM DESCRIPTION:

This program is designated solely to provide guidance on scheduling frequency. Disqualifying conditions, tests, and forms required are promulgated in Manual of the Medical Department, [NAVMED P-117, Chapter 15](#), Article 15-106, Change 126 for Submarine Qualified Military, and in [OPNAVINST 6420.1](#), 22 Dec 2005 for Non-submarine Qualified Military, all civilians, governmental and contractor employees, and military dependents.

PROVIDER COMMENTS:

Active Duty Submarine Duty Candidates and Submarine Qualified—the exam is given in accordance with MANMED article 15-106 and must be reviewed and signed by a UMO.

Cruises of Short Duration: (such as builder's trials and test of submarine equipment): Non-submarine Qualified Military, all civilians, governmental and contractor employees, and military dependents MUST:

1. Complete Encl (1) of OPNAVINST 6420.1
2. Have the completed enclosure(1) and their medical record reviewed by an submarine duty Independent Duty Corpsman (IDC) or Undersea Medical Officer (UMO) to determine suitability to embark on a submarine. Enclosure 2 of OPNAVINST 6420.1 provides guidance to determine qualification to embark on a submarine
3. A UMO must make the final determination of qualification to embark utilizing the guidelines in encl (2) of OPNAVINST 6420.1
4. If the UMO determines additional medical evaluation is required to clear the individual for embarkation, the Civilian personnel or their employers will be responsible for obtaining the required medical consultation and forwarding it to the screening UMO in a timely manner.

Cruises of Long Duration or Forward Deployed. All individuals are required to have:

1. A physical exam within 12 months of the anticipated embarkation date certifying that they meet the requirements of enclosure (2).
2. An interview and review of their health record. Enclosure (3) of OPNAVINST 6420.1 shall be used to document this review.
3. A UMO shall make the final recommendation concerning the individual's fitness for embarkation. Completion of enclosure (1) is required within 1 month of scheduled embarkation.
4. A health record review by the SUBIDC upon embarkation.

NOTE: The responsibility for ensuring that each individual to be embarked on submarines for extended periods has received an appropriate physical examination rests with the command issuing the travel orders. Military non-submarine and civilian employees of the government should be examined by the command to which the individual is attached prior to commencement of travel to embarkation location. If medical examinations are ordered or offered to civilian employees of the government, the activity must follow procedures established by CPI 339. Other civilian or non-governmental personnel should be examined by their company-designated physician or, if that is not appropriate, by their personal physician prior to reporting for embarkation. The examination shall utilize enclosure (2) of OPNAVINST 6420.1, and phone consultation with the local ISIC UMO as applicable.

PROGRAM REVISED: 10/2005, LCDR Jim Caviness.

WASTEWATER/SEWAGE WORKER

702

EXAM ELEMENT	Program Frequency	Penta-ennial		
		BASE	PERI	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Penta-E		No
Major illness or injury	Yes	Penta-E		No
Hospitalization or surgery	Yes	Penta-E		No
Cancer	Yes	Penta-E		No
Back injury	Yes	Penta-E		No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Penta-E		No
Have you ever smoked	Yes	Penta-E		No
Do you currently smoke (packs/day)	Yes	Penta-E		No
Heart disease, high blood pressure, or stroke	Yes	Penta-E		No
Current medication use (prescription or OTC)	Yes	Penta-E		No
Medication allergies	Yes	Penta-E		No
Any reproductive health concerns	Yes	Penta-E		No
Skin disease	Yes	Penta-E		No
Comments on medical history:	Yes	Penta-E		No
Qualifications:				
Current immunizations	Yes	Penta-E		No
Certifications performed IAW NAVMED P-5010	Yes	Penta-E		No
Is surveillance/PPE consistent with exposures	Yes	Penta-E		No
Are any abnormalities related to exposures/occupations	Yes	Penta-E		No
Recommendations:	Yes	Penta-E		No

PROGRAM DESCRIPTION:

The immunization status of wastewater/sewage worker should be reviewed every five years.

Tetanus, diphtheria and pertussis (Tdap) vaccine should be updated according to current recommendations.

Polio vaccine is administered to individuals not fully immunized.

PROVIDER COMMENTS:

For those applicants without a written record of polio immunization status, attendance at public school in the U.S. is adequate for presumption of prior oral polio vaccine administration.

REFERENCES:

1. NAVMED P-5010, Manual of Naval Preventive Medicine;
2. NAVMEDCOMINST 6230.3, Immunizations and Chemoprophylaxis.

PROGRAM REVISED 10/97.

WEIGHT HANDLING EQUIPMENT (MANAGEMENT OF)

704

OCCUPATIONS IN THIS PROGRAM:

- Crane operators
- *Railroad equipment operators
- *Conductors
- *Brakemen
- *Riggers
- *Climbers

EXAM ELEMENT	Program Frequency		Biennial	
	BASE	PERI	BASE	TERM
Medical history: have you ever had:				
Personal history of:				
Is your work exposure history current (OPNAV 5100/15)	Yes	Bienn		No
Major illness or injury	Yes	Bienn		No
Hospitalization or surgery	Yes	Bienn		No
Cancer	Yes	Bienn		No
Back injury	Yes	Bienn		No
Do you drink 6 or more drinks per week (beer, wine, liquor)	Yes	Bienn		No
Have you ever smoked	Yes	Bienn		No
Do you currently smoke (packs/day)	Yes	Bienn		No
Heart disease, high blood pressure, or stroke	Yes	Bienn		No
Current medication use (prescription or OTC)	Yes	Bienn		No
Medication allergies	Yes	Bienn		No
Any reproductive health concerns	Yes	Bienn		No
Lung/resp disease (ex: COPD, bronchitis, pneumonitis)	Yes	Bienn		No
Syphilis or gonorrhea	Yes	Bienn		No
Headache, dizziness, light-headedness, weakness	Yes	Bienn		No
Nervous stomach or ulcer	Yes	Bienn		No
Head injury	Yes	Bienn		No
Change or loss of vision	Yes	Bienn		No
Loss or change in hearing	Yes	Bienn		No
Chest pain, angina, heart attack	Yes	Bienn		No
Repeated episodes of loss of or near loss of consciousness	Yes	Bienn		No
Kidney disease	Yes	Bienn		No
Epilepsy (seizure disorder)	Yes	Bienn		No
Problems with balance and coordination	Yes	Bienn		No
Problems with numbness, tingling, weakness in hands or feet	Yes	Bienn		No
Migraine headache	Yes	Bienn		No
Diabetes or other endocrine gland disorder	Yes	Bienn		No
Mental/emotional illness	Yes	Bienn		No

EXAM ELEMENT	BASE	PERI	TERM
Depression, diff concentrating, excessive anxiety	Yes	Bienn	No
Treatment for drug or alcohol use	Yes	Bienn	No
Personality change	Yes	Bienn	No
Muscle or joint problems	Yes	Bienn	No
Permanent defect from illness, disease or injury	Yes	Bienn	No
Family history of:			
Heart disease, high blood pressure, or stroke	Yes	Bienn	No
Comments on medical history:	Yes	Bienn	No
Laboratory:			
Serum chemistry:			
Baseline lipid profile	Yes	No	No
Urinalysis:			
Routine:			
Urinalysis	Yes	Bienn	No
Additional lab tests:			
EKG/lipid profile done once past age 40?	Yes	*	No
Cardiology:			
Baseline electrocardiogram	Yes	No	No
Audiology:			
Audiogram	Yes	Bienn	No
Optometry:			
Vision screen (visual acuity)	Yes	Bienn	No
Color vision	Yes	Bienn	No
Visual fields	Yes	Bienn	No
Comments on laboratory results:	Yes	Bienn	No
Physical examination:			
Vital signs	Yes	Bienn	No
Special attention in examination to:			
Central nervous system	Yes	Bienn	No
Peripheral nervous system (strength, sensation, DTR)	Yes	Bienn	No
Back & musculoskeletal system	Yes	Bienn	No
Extremities	Yes	Bienn	No
Cardiovascular system	Yes	Bienn	No
Peripheral vascular system (Raynaud's)	Yes	Bienn	No
Eyes	Yes	Bienn	No
Abdomen	Yes	Bienn	No
Genitourinary tract	Yes	Bienn	No
Respiratory system	Yes	Bienn	No
Ears (tympanic membranes)	Yes	Bienn	No
Overall physical fitness	Yes	Bienn	No
Other appropriate examination (specify)	Yes	Bienn	No
Comments on physical examination:	Yes	Bienn	No
Is surveillance/PPE consistent with exposures	Yes	Bienn	No
Are any abnormalities related to exposures/occupations	Yes	Bienn	No
Recommendations:	Yes	Bienn	No

*Waivers pertain only to crane operators.

PROGRAM DESCRIPTION:

Military personnel are exempt from the requirements of the Commercial Motor Vehicle Safety Act of 1986, and, in particular, from the requirements of 49 CFR Part 383 regarding physical examination requirements in order to obtain a commercial drivers license. The scope of the periodic examination is considered sufficient to meet the requirements. Waivers for previously qualified operators are authorized by activity Commanding Officers after appropriate medical and management review - see reference 1.

PROVIDER COMMENTS:

REFERENCES:

1. NAVFAC P-307, 2. 49 CFR 391.41-49.

Chapter 8:C8. Listing of Tests

TEST	TEST NAME
1000	Medical history: have you ever had:
1100	Personal History of:
1105	Is Your Work Exposure History Current (OPNAV 5100/15)
1107	Since last SF 88/93 physical have you had?
1110	Major Illness or Injury
1120	Hospitalization or Surgery
1130	Cancer
1140	Back Injury
1150	Do You Drink 6 or More Drinks per week? (beer, wine, liquor)
1155	Have You Ever Smoked?
1160	Do You Currently Smoke? (packs/day)
1161	How Many Years Have or Did You Smoke?
1162	None _____ Number Years _____
1163	Greatest Number of Packs Per Day Smoked _____
1164	Former Smokers - Time Since Quitting: Years _____
1165	Do You Use Smokeless Tobacco?
1169	Average Packs Per Day Smoked
1170	Heart Disease, High Blood Pressure or Stroke
1180	Current Medication Use (Prescription or OTC)
1182	Medication Allergies
1190	Use of Seat Belts (Always, Mostly, Some, None)
1192	Any Reproductive Health Concern
1200	Blood Diseases (Anemia)
1210	Blood Transfusions
1220	Allergies (Asthma, Hay Fever, Eczema)
1225	Have You Ever Been Evaluated for Latex Allergy?
1230	Skin Disease
1231	Recurrent Skin Rash
1235	Precancerous Lesions
1240	Heat Injury (Cramps, Exhaustion, Stroke)
1250	Peripheral Vascular Disease
1260	Hepatitis or Jaundice
1270	Radiation Therapy or Radiopharmaceutical Treatment
1280	Lung/Resp Disease (Ex: COPD, Bronchitis, Pneumonitis)
1285	Wheezing
1290	Tuberculosis
1300	Infectious Disease
1302	History of Chicken Pox
1304	Communicable Disease
1305	Syphilis or gonorrhea
1307	past work exposure to MDA or other toxic substances
1310	Treatment with Steroids or Chemotherapy/Cytotoxic Drugs
1315	Decreased Immunity
1317	Autoimmune disease or condition

TEST	TEST NAME
1320	Use of Nitrate Medication (Nitroglycerine)
1325	Use of medications to treat erectile dysfunction (ED)
1330	Use of Anticholinergic Drugs (Donnatal)
1340	Use of Barbiturates
1400	Headache, Dizziness, Light-headedness, Weakness
1410	Nausea or Vomiting
1415	Nervous Stomach or Ulcer
1420	Exposure (Acclimatization) to Heat
1421	Cold Injury (Frostbite, Chill, Trench Foot, Hypothermia)
1430	Weight Loss
1440	Head Injury
1450	Tremors
1455	Use of Eye Glasses
1460	Change or Loss of Vision
1461	Contact Lens Use
1462	Lens Surgery
1463	Photosensitizing Medications
1464	Unusual Sensitivity to Sunlight
1465	Loss of Vision in Either Eye
1466	Color Blindness
1470	Cataracts
1480	Eye Irritation
1490	Eye Injury
1500	Glaucoma
1505	Any Other Eye or Vision Problem
1507	Mucosal irritation
1510	Perforation of Nasal Septum
1512	Sinus/Nasal Symptoms
1513	Rhinitis
1514	Nose Bleeds
1515	Inability to Smell
1520	Tooth or Gum Disease
1530	ringing in the Ear (Tinnitus)
1534	Any Injury to Your Ears
1535	Ruptured Ear Drum
1540	Loss or Change in Hearing
1541	A Need to wear a Hearing Aid
1542	Any Other Hearing or Ear Problem
1543	Problem hearing conversation/people
1544	Recreational/non-occupational exposure to loud noise
1550	Chest Pain, Angina, Heart Attack
1551	Repeated Episodes of Loss of or Near Loss of Consciousness
1555	Frequent Pain or Tightness in Chest
1556	Palpitations
1557	Swelling in Legs or Feet (Not Caused By Walking)
1558	Cardiovascular or circulatory condition or disease
1559	Any Other Heart Problems You've Been Told About

TEST	TEST NAME
1560	Coughing Up Blood (Hemoptysis)
1570	Shortness of Breath
1580	Cough (Dry or Productive)
1585	Any Finding Related to Asbestos Exposure
1590	Pneumonia
1600	Chronic Abdominal Pain, Vomiting, Other GI Symptoms
1605	Change in Frequency or Appearance of Bowel Movements
1610	Liver Disease
1620	Kidney Disease
1625	Kidney Stones
1630	Problems with Urination/Blood in Urine
1635	Protein in Urine
1640	Current Pregnancy (Self or Spouse)
1645	Current Pregnancy (Females Only)
1646	Infertility or miscarriage (Self or Spouse)
1650	Impotence or Sexual Dysfunction
1660	Infertility or Miscarriage (Self or Spouse)
1670	Epilepsy (Seizure Disorder)
1680	Problems with Balance & Coordination
1682	Problems with Numbness, Tingling, Weakness in Hands or Feet
1690	Migraine Headache
1700	Thyroid Disease (Heat or Cold Intolerance)
1710	Diabetes or Other Endocrine Gland Disorder
1720	Mental/Emotional Illness
1725	Insomnia or sleep disturbance
1727	Unexplained fatigue
1730	Depression, Difficulty Concentrating, Excessive Anxiety
1732	Treatment for Drug or Alcohol Use
1740	Personality Change
1745	Claustrophobia
1750	Vibration White Finger Disease
1755	Bone Problems (Broken Bones)
1760	Muscle or Joint Problems
1763	Any Other Muscle or Skeletal Problem That May Interfere
1764	With Using a Respirator
1765	Permanent Defect from Illness, Disease or Injury
1767	Musculoskeletal problems
1770	Adverse Reaction to Eating Any Vegetable or Fruit
1775	Adverse Reaction to Any Rubber/Latex Containing Product
1780	Multiple Operations or Chronic Medical Instrumentation
1785	Unexplained Hives or Symptoms of Shock
1790	Itchy Eyes, Runny Nose, Respiratory Symptoms
1791	When Using Latex Gloves
2000	Work History Of:
2005	Prior Respirator Use
2007	If Yes, Any Problems That Interfered With Use
2010	Exposure to Dusts (Coal, Blast, Grit, Sand, Nuisance)

TEST	TEST NAME
2020	Exposure to Asbestos
2021	10 or More Years Since First Exposure to Asbestos
2030	Exposure to Lead
2040	Exposure to Benzene
2050	Exposure to Chemotherapeutic/Antineoplastic Agents
2055	Exposure to Aerosolized Antibiotics/Antivirals
2060	Exposure to Anesthetic Gases
2070	Exposure to Ethylene Oxide
2080	Exposure to Chromium or Chromic Acid
2090	Exposure to Silica or Sand
2100	Exposure to Hydrogen Fluoride or Inorganic Fluorides
2104	10 or More Years Since First Exposure to Arsenic
2105	10 or More Years Since First Exposure to Vinyl Chloride
2110	Exposure to Ionizing Radiation
2120	Exposure to Non-Ionizing Radiation (Laser, IR, MW, UV)
2130	Exposure to Vibration (Segmental or Whole Body)
2135	Exposure to Excessive Noise
2137	Past work exposure to MDA or other toxic substances
2140	Eye Injury
2150	Exposure to Skin Irritants
2160	Exposure to Respiratory Irritants
2170	Exposure to Carcinogens
2175	Exposure to other explosives or propellants
2180	Exposure to Isocyanate Foam or Paint
2190	Sensitization to Isocyanates (TDI, MDI)
2200	Exposure to Solvents (MEK, PERC, TCE, Toluene...)
2205	Exposure to Potentially Infectious Body Fluids
2210	Exposure to Formaldehyde
2215	Exposure to Cadmium
2220	Do You Handle Organophosphate or Carbamate Pesticides
2221	Reserved
2222	Reserved
2223	Reserved
2226	Exposure to Methylene Chloride,
2227	Dichloromethane, Methylene Dichloride
2230	Regular Contact With Latex Gloves or Other
2231	Rubber Products
2500	Family History Of:
2510	Blood Diseases (Anemia)
2520	Genetic Disease (Include Children)
2530	Cancers (Leukemia, Tumors)
2540	Heart Disease, High Blood Pressure or Stroke
2545	Cataracts
2550	Decreased Immunity
2990	COMMENTS ON MEDICAL HISTORY
3000	LABORATORY
3100	Hematology:

TEST	TEST NAME
3110	Complete Blood Count (HGB, HCT, WBC, MCV, MCH, MCHC)
3111	Hemoglobin (HBG)
3112	Mean Corpuscular Volume (MCV)
3113	White Blood Count (WBC)
3114	Hematocrit
3120	Differential White Blood Cell Count
3125	RBC Morphology
3130	Reticulocyte count
3140	Platelet Estimate
3141	Platelet Count
3500	Serum Chemistry:
3510	Random Serum/Plasma Glucose
3511	Fasting Blood Glucose
3520	Basic Profile to Include:
3521	BUN, Creatinine, Uric Acid, Calcium,
3522	Total Bilirubin, Alkaline phosphatase, SGOT (AST)
3530	Liver Profile to Include:
3531	SGOT (AST), Total Bilirubin, Alkaline phosphatase, ALT
3532	Albumin, Alkaline Phosphatase, LDH
3541	BUN, Creatinine, Serum Electrolytes (Na, K)
3545	BUN and Creatinine
3546	Creatinine
3547	Cholesterol
3548	Cholesterol Every 5 Years
3550	SGOT (AST)
3551	SGOT (AST) Every 5 Years
3560	Phosphate
3570	Globulin
3580	Acid Phosphatase
3590	CPK
3600	Bilirubin (Direct)
3608	Baseline Lipid Profile
3609	Lipid Profile (if clinically indicated)
3610	Triglycerides
3611	Triglycerides (if clinically indicated)
3620	GGT
3630	Blood Lead and Zinc Protoporphyrin (ZPP)
3631	Blood Lead
3640	RBC Cholinesterase
3641	Plasma (or Serum) Cholinesterase
3650	Serum FSH, LH and Estrogen
3660	Blood Methemoglobin (If cyanotic)
3670	Blood Acetone
3675	Serum Total Estrogen (female)
3680	Serum Follicle Stimulating Hormone (FSH)
3685	Serum Luteinizing Hormone (LH)
3690	Cadmium in Blood

TEST	TEST NAME
4000	Urinalysis:
4100	Routine:
4110	Urinalysis with Microscopic
4120	Urinalysis without Microscopic
4200	Urine Chemistry:
4210	Urine Total Phenol
4220	Urine Hydroquinone (If Urine is Dark Brown)
4230	Urine Mercury
4250	Urine Fluoride - Post Shift
4260	Urine 24 - Hour Protein (Quantitative)
4270	Urine P-Nitrophenol (If Darkening Observed)
4280	Blank
4285	Cadmium in Urine (CdU)
4290	Beta-2-Microglobulin (β_2 -M) in Urine
4295	Urine total Arsenic
4500	Cytology:
4510	Sputum Cytology
4520	Urine Cytology
4800	Additional Lab Tests:
4810	Stool Hemocult (Over age 40)
4811	Stool Hemocult (Required for Males)
4820	Sperm Count (Male)
4830	RPR
4840	Tuberculosis Screen
4850	Pregnancy Testing or Laboratory Testing of
4851	Fertility if Requested by Employee and Deemed
4852	Appropriate by the Physician
4855	Serum to be frozen
4860	Pressure and Oxygen Tolerance Test
4870	Whole Body Count
4872	EKG/Lipid Profile Done Once Past Age 40?
5000	Cardiology:
5010	Electrocardiogram
5015	Electrocardiogram Every 5 Years
5020	Exercise Cardiac Stress Test
5025	Electrocardiogram (if Clinically Indicated)
5030	Baseline Electrocardiogram
5200	Audiology:
5210	Audiogram
5220	Audiogram - 15 hr/40 hr Noise Free
5225	Follow-up Audiogram
5230	Tympanogram Status
5400	Radiology:
5410	Chest X-ray (PA)
5411	Chest X-ray (PA) Every 5 Years
5420	Chest X-ray (Asbestos)
5421	Chest X-ray (Asbestos) Every 5 Years

TEST	TEST NAME
5422	Chest X-ray (Asbestos) Every 2 Years
5423	Chest X-ray (Asbestos) Age Dependent
5424	Chest X-ray (PA) (frequency determined by examining physician)
5425	Using Form - NAVMED 6260/7
5426	Reserved
5428	Reserved
5430	Reserved
5431	Reserved
5600	Spirometry:
5605	Ethnic Background
5610	Spirometry (FVC, FEV1, FEV1/FVC)
5611	Forced Vital Capacity (FVC)
5612	Forced Expiratory Volume in One Second (FEV1)
5613	Spirometry (FVC, FEV1, FEF)
5800	Optometry:
5805	Date of Most Recent Refraction - When Applicable
5807	Current Refraction Prescription - When Applicable
5810	Vision Screen (Visual Acuity)
5811	Reserved
5812	Reserved
5813	Reserved
5814	Reserved
5815	Reserved
5816	Reserved
5817	Reserved
5818	Reserved
5819	Color Vision
5820	Depth Perception
5830	Visual Fields
5835	Contrast Sensitivity
5836	External Ocular and Fundus Examination
5840	Ophthalmologic Exam
5850	Slit Lamp Exam
5860	Tonometry
5861	Tonometry Over Age 40 (if clinically indicated)
5865	Near Vision (Welders Only)
5870	Peripheral Vision
5900	Dental:
5910	Dental Exam
5920	Other Tests Deemed Appropriate by the Physician
5990	COMMENTS ON LABORATORY RESULTS:
6000	Physical Examination:
6005	Required When Positive History Questions are Obtained:
6010	Vital Signs
6011	Height
6012	Weight
6013	Diastolic Blood Pressure

TEST	TEST NAME
6100	Special Attention in Examination to:
6110	Central Nervous System
6120	Peripheral Nervous System (Strength, Sensation, DTR)
6130	Back and Musculoskeletal System
6135	Extremities
6140	Cardiovascular System
6150	Peripheral Vascular System (Raynaud's)
6155	Varicose Veins of Lower Extremities
6160	Cyanosis
6165	Clubbing
6167	HEENT
6170	Eyes
6175	Eyes
6180	Gums (e.g., Lead Lines?)
6190	Teeth (Acid Erosion)
6200	Abdomen
6205	Breast Examination (Female)
6210	Genitourinary Tract
6215	GU (including Testicle Size)
6220	Testes (Male)
6230	Kidney/Renal System (CVA tenderness, peripheral edema?)
6240	Liver
6245	Spleen
6250	Mucous Membranes
6260	Nasal Mucosa (Septal Perforation)
6262	Sinuses
6265	Nasal Mucosa
6270	Respiratory System
6280	Ears (Tympanic Membranes)
6290	Skin (Rash, Erosion, Ulcer, Pigment, Eczema, Etc.)
6300	Skin, With Regard to Malignant and Pre-malignant Conditions
6310	Thyroid
6320	Metabolic Disturbance (Fever, Tachycardia)
6330	Hematopoetic (bruising, petechiae, pallor)
6340	Immunocompetence (Lymphatic System)
6350	Obesity
6360	Overall Physical Fitness
6365	Rectal Examination
6366	Hemorrhoids
6367	Prostate Palpation or Other At-Least-As-Effective
6368	Diagnostic Test(s) for Males Over 40 Years Old
6370	Body Habitus
6900	Other Appropriate Examination (Specify):
6990	COMMENTS ON PHYSICAL EXAMINATION:
7100	Qualifications:
7110	Respiratory Protection - Ensure Worker is Enrolled in RPP
7120	Sight Conservation

TEST	TEST NAME
7130	Current Immunizations
7140	Measles/Mumps/Rubella Immune Status
7145	Measles Immune Status
7147	Varicella Immune Status
7150	Is Hepatitis B Vaccine Series Complete or
7151	Prior Infection Documented?
7500	Certifications Performed IAW:
7510	NAVMED P117, Chapter 15
7520	NAVMED P-5010
7530	NAVSEA OP-2239
7540	FPM TS 146
7560	NAVMED P-5055
7570	NAVFAC P-306
7575	FPM 930
7576	ANSI A136.1 OF 1986
7577	OPNAVINST 5100.23 (series) CHAPTER 22
7580	NCIS Manual for Administration
7596	Asbestos History Form 2493-1 Completed
7597	Asbestos History Form 2493-2 Completed
7700	Update SF 93 as Applicable
7710	Review Functional/Environmental Requirements of SF 78
7720	Complete NAVMED 6260/5, Rev (5/90), Periodic Health Evaluation
7730	Review DD 2493-1, Initial Exam or DD 2493-2, Periodic Exam
8000	Hearing Conservation:
8100	Has Baseline Been Reestablished Due to PTS?
8110	High Frequency Average Exceeds 45 dB Bilaterally?
8120	Ear Plugs Fitted and Issued
8130	Refer to Audiologist or Physician
9000	Special Notations:
9010	Substance(s) Known Human Carcinogen
9020	Substance(s) Suspected Human Carcinogen
9030	Substance(s) Known Mutagenic or Fetotoxic Effects
9040	Substance(s) Suspected Human Mutagenic/Fetotoxic Effects
9050	Counseling Regarding Combined Effects of Smoking
9051	and Asbestos Exposure
9060	Assess Knowledge of Universal Blood/Body Fluid Precautions
9065	Physician's/provider's Written Opinion Required
9067	Written Notification of Permanent Threshold Shift Required
9070	Physician's/provider's Written Opinion not Required
9075	DD 2493-1 Initial Exam or DD 2493-2 Periodic Exam not Required
9970	Is surveillance/PPE Consistent With Exposures Listed Below
9972	Has patient completed an updated OSHA respiratory questionnaire?
9975	ASSESSMENT:
9980	Are Any Abnormalities Related To Exposures/Occupations Listed Below
9985	SF 88/93 Reviewed and Found Complete
9990	RECOMMENDATIONS:

Chapter 9:C9. Reviews and Revisions

The following list of stressors was reviewed and not included in the Medical Matrix. Any questions or concerns should be addressed to Committee members or Occupational Medicine staff at NAVENVIRHLTHCEN. The list will be reviewed periodically and updated.

STRESSOR	DATE REVIEWED
Acetone	Dec 1989
Asphalt Fumes	Dec 1989
Benzo(a) pyrine	Dec 1989
Crysene	Dec 1989
Fungicides	Nov 1990
N-heptane	Dec 1989
N-Hexame	Dec 1989
Petroleum distillates (kerosene, Stoddard Solvent, Naphtha, Mineral Spirits)	Dec 1989
Silver	Dec 1989

On further review for chronic effects and evaluation of usage, these programs were removed from the Medical Matrix. Solvents were included in Program #603, Mixed Solvents, and program #157 was combined with an existing program. The program numbers will be retained for historical purposes.

107	Ammonia	Aug 1990
119	Benzoyl Peroxide	Aug 1990
120	Benzyl Chloride	Aug 1990
123	2-Butanone (Methyl Ethyl Ketone)	Aug 1990
129	Chlorine	Aug 1990
136	Cyclohexanone	Aug 1990
144	Ethyl Butyl Ketone	Aug 1990
147	Ethylene Glycol	Aug 1990
153	Glycol Ethers (other than ethoxy and methoxy ethanol)	Aug 1990
212	N-Heptane	Aug 1990
154	Hexone	Aug 1990
157	Hydrogen Fluoride (Combined with #150)	Aug 1990
160	Isopropyl Alcohol	Aug 1990
164	Methyl (N-Amyl) Ketone	Aug 1990
165	Methyl Alcohol	Aug 1990
169	Morpholine	Aug 1990
101	Nuisance Dusts	Aug 1990
181	2-Pentanone (Methyl Propyl Ketone)	Aug 1990
182	Phenol	Aug 1990
183	Phosgene	Aug 1990
504	Radiation- Infrared, UV and visible	Apr 1995
507	Radiation-Radiofrequency & Microwave	Apr 1995
188	Sodium Hydroxide	Aug 1990

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193	TMPP (Trimethylolpropane Phosphate	Aug 1990
199	Triorthocresylphosphate (TOCP)	Aug 1990
200	Tungsten (merged with #208)	Feb 1994
201	Vanadium	Feb 1994
202	Vinyl Acetate	Aug 1990
206	Zinc Oxide	Aug 1990

The following programs were moved from the chemical stressors section to the mixed exposures section.

PROGRAM NUMBER	STRESSOR	DATE REVIEWED
108	Anesthetic Gases	Apr 1995
207	Animal Associated Disease	Apr 1995
110	Antineoplastic Drugs	Apr 1995
216	Herbicides	Apr 1995
162	Machine Oil Mists	Apr 1995
212	Manmade Mineral Fibers	Apr 1995
179	Organophosphate/Carbamate Compounds	Apr 1995

Asbestos Current Worker - 10+ years since first exposure (#113) and Asbestos Current Worker - 0 to 10 years since first exposure (#114) were combined into one program, Asbestos Current Worker (#113).

Chapter 10:

C10. General References

Zenz C, Dickerson BO, Horvath EP (eds). *Occupational Medicine*, 3rd Ed. St. Louis: Mosby, 1994.

Rom WN (ed). *Environmental & Occupational Medicine*, 3rd Ed. Philadelphia: Lippincott-Raven, 1998.

Hathaway GJ, Proctor NH (eds). *Proctor and Hughes' Chemical hazards of the workplace*. 5th ed. New York: Van Nostrand Reinhold; 2004.

Sullivan JB, Krieger GR (eds). *Clinical Environmental Health and Toxic Exposures*. Philadelphia: Lippincott Williams & Wilkins, 2001.

Rosenstock L, Cullen MR, Brodtkin CA, Redlich CA (eds). *Textbook of Clinical Occupational and Environmental Medicine*, 2nd Ed. Philadelphia: Elsevier Saunders, 2004.

LaDou J (ed). *Current Occupational & Environmental Medicine*, 3rd Ed. New York: McGraw-Hill, 2004.

DiNardi SR (ed). *The Occupational Environment: Its Evaluation, Control and Management*. 2nd Ed. Fairfax: American Industrial Hygiene Assoc, 2003.

NEHC-TM OM 6260
Chapter 11:

C11. Sample Letters

C11.1. Suggested or Requested Changes in the Medical Matrix

The following page is a form that may be used to request a change to the Medical Matrix. Use of the form is not required. However, the information referred to in the form should be included when submitting a request. (A copy in Adobe Acrobat© format that may be filled out and submitted online is available on the Matrix page of the NEHC Occupational and Environmental Medicine Web site.)

Medical Matrix Improvement Request

Name Date

Address

Phone E-mail

This request is for (circle one):

a change to an existing program

the addition of a new program

Name of Existing Program or Hazard

Name of New Program or Hazard

Recommendation (include specifics)

References Supporting Your Recommendation

Mail to:
Navy Environmental Health Center
Suite 1100
620 John Paul Jones Circle
Portsmouth, VA 23708-2111

E-mail to:
occmed@nehc.mar.med.navy.mil

Fax to:
757-953-0787

C11.2. Physician's/Provider's Written Opinion Samples

On the following pages are samples of physician's/provider's written opinions required by OSHA for certain programs. The physician's/provider's written opinion contains the results of the medical examination and the following:

1. The physician's/provider's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of health impairment from continued exposure to the particular hazard.
2. Any recommendations for limitations on the employee or for use of personal protective equipment.
3. A statement that the employee has been informed of the results of the medical evaluation and about any medical conditions resulting from exposure to the particular hazard.

The physician's/provider's written opinion is given to the employee's command and therefore must not reveal specific findings or diagnoses unrelated to occupational exposure to the hazards.

Sample Physician's/provider's Written Opinions are given for the following.

[Asbestos Medical Surveillance Program](#)

[Hazardous Waste Workers and Emergency Responders](#)

[Notice of Significant Threshold Shift](#)

[Occupational Exposure to Blood and/or Body Fluids](#)

[Occupational Exposure to Butadiene](#)

[Occupational Exposure to Cadmium](#)

[Occupational Exposure to Ethylene Oxide](#)

[Occupational Exposure to Formaldehyde](#)

[Occupational Exposure to Lead](#)

[Occupational Exposure to Methylene Chloride](#)

[Occupational Exposure to Methylenedianiline.](#)

NEHC-TM OM 6260
 ASBESTOS MEDICAL SURVEILLANCE PROGRAM

PHYSICIAN'S/PROVIDER'S WRITTEN OPINION in the case of:

Name	SSN	Dept/Code

1. The above noted individual was examined according to current guidelines regarding exposure to asbestos. On the basis of this examination the following comments are submitted:
2. A medical condition WAS/WAS NOT detected that would place the employee at an increased risk of material health impairment from exposure to asbestos, tremolite, anthophyllite, or actinolite. Comments (if applicable):

3. Limitations ARE/ARE NOT recommended on this individual's exposure or use of personal protective equipment, including respirators. Comments (if applicable):

4. The employee has been informed of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.
5. The employee has been counseled regarding the results of this medical evaluation and of any medical conditions resulting from asbestos, tremolite, anthophyllite or actinolite exposure that require further explanation or treatment, as noted by his/her signature below.

(employee's signature)	(date)

(examiner's signature and stamp)	(date)

Original: employer
 Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

THIS LETTER IS PROTECTED BY THE PRIVACY ACT OF 1974

NEHC-TM OM 6260
NOTICE OF SIGNIFICANT THRESHOLD SHIFT

Name	SSN	Dept/Code

Ref: (a) 29 CFR 1910.95

1. The results of the hearing test provided to you as part of the Navy Hearing Conservation Program indicate that you may have suffered deterioration in your hearing sensitivity. This condition is referred to as a Significant Threshold Shift (STS). Because of the test results, you have been or will be scheduled for one or more hearing tests to confirm the findings. Also, you may be given a medical examination to determine the probable cause of the STS. This written notification is presented under the requirements of reference (a).
2. Audiometric technicians have provided you with properly fitted hearing protection devices and given you a reindoctrination of the Hearing Conservation Program requirements. In addition, the following steps have been taken in response to your change in hearing:
 - ____ Follow-up Audiogram(s)
 - ____ Medical Consultation
 - ____ Referral to Audiologist
 - ____ Other:
3. In order to preserve your hearing, it is very important that you wear your hearing protection at all times when in areas identified as noise hazardous or in the vicinity of noise hazardous tools, weapons or operations.

I HAVE READ AND UNDERSTAND THE ABOVE INFORMATION:

--	--

(patient's signature)

(date)

--	--

(Audiometric Technician's Signature and Stamp)

(date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

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NEHC-TM OM 6260
OCCUPATIONAL EXPOSURE TO BLOOD AND/OR BODY FLUIDS

HEALTHCARE PROFESSIONAL'S WRITTEN OPINION in the case of:

Name	SSN	Dept/Code

1. The above noted individual was examined according to current guidelines regarding exposure to blood and/or body fluids. On the basis of this examination the following comments are submitted:

2. There ARE/ARE NOT recommended limitations upon the employee's ability to receive hepatitis B vaccination. Limitations, if recommended, are based on the following findings:

3. The employee has been informed of the results of this medical evaluation and about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.

(employee's signature)	(date)

(examiner's signature and stamp)	(date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

THIS LETTER IS PROTECTED BY THE PRIVACY ACT OF 1974

NEHC-TM OM 6260
OCCUPATIONAL EXPOSURE TO BUTADIENE

PHYSICIAN'S/PROVIDER'S WRITTEN OPINION in the case of:

Name	SSN	Dept/Code

1. The above noted individual was examined according to 29 CFR 1910.1051 regarding occupational exposure to butadiene. On the basis of this examination the following comments are submitted.
2. A medical condition WAS/WAS NOT detected that would place the employee at an increased risk of material impairment of health from exposure to butadiene. Comments (if applicable):

3. Limitations ARE/ARE NOT recommended on this individual's exposure to butadiene.

4. Limitations ARE/ARE NOT recommended on this individual's exposure or use of personal protective equipment, including respirators. Comments (if applicable):

5. The employee has been counseled regarding the results of this medical evaluation, and of any medical conditions resulting from butadiene exposure that require further evaluation or treatment.
6. Next biological monitoring or medical examination scheduled for _____(date)

(employee's signature)	(date)

(examiner's signature and stamp)	(date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

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NEHC-TM OM 6260
OCCUPATIONAL EXPOSURE TO CADMIUM

PHYSICIAN'S/PROVIDER'S WRITTEN OPINION in the case of:

--	--	--

Name

SSN

Dept/Code

1. The above noted individual was examined according to 29 CFR 1910.1027 regarding occupational exposure to cadmium. On the basis of this examination the following comments are submitted.
2. A medical condition WAS/WAS NOT detected that would place the employee at an increased risk of material impairment of health from exposure to cadmium. Comments (if applicable):

3. Limitations ARE/ARE NOT recommended on this individual's exposure or use of personal protective equipment, including respirators. Comments (if applicable):

4. The employee has been counseled regarding the results of this medical evaluation, including results of biological monitoring, and of any medical conditions resulting from cadmium exposure that require further evaluation or treatment, and any limitation on the employee's diet or use of medications.
5. Next biological monitoring or medical examination scheduled for _____(date)

--	--

(employee's signature)

(date)

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(examiner's signature and stamp)

(date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

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NEHC-TM OM 6260
OCCUPATIONAL EXPOSURE TO FORMALDEHYDE

PHYSICIAN'S/PROVIDER'S WRITTEN OPINION in the case of:

Name	SSN	Dept/Code

1. The above noted individual was examined according to current guidelines regarding exposure to formaldehyde. On the basis of this examination the following comments are submitted:
2. A medical condition WAS/WAS NOT detected that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde. Comments (if applicable):

3. Limitations ARE/ARE NOT recommended on this individual's exposure or use of personal protective equipment, including respirators. Comments (if applicable):

4. The employee has been counseled regarding (1) the results of this medical evaluation, (2) any medical conditions which would be aggravated by exposure to formaldehyde or which may have resulted from past formaldehyde exposure or from exposure in an emergency, and (3) whether there is a need for further examination or treatment.

(employee's signature)	(date)

(examiner's signature and stamp)	(date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

THIS LETTER IS PROTECTED BY THE PRIVACY ACT OF 1974

NEHC-TM OM 6260
OCCUPATIONAL EXPOSURE TO LEAD

PHYSICIAN'S/PROVIDER'S WRITTEN OPINION in the case of:

Name	SSN	Dept/Code

1. The above noted individual was examined according to 29 CFR 1910.1025 regarding occupational exposure to lead. On the basis of this examination the following comments are submitted:
2. A medical condition WAS/WAS NOT detected that would place the employee at an increased risk of material impairment of health from exposure to lead. Comments (if applicable):

3. Limitations ARE/ARE NOT recommended on this individual's exposure or use of personal protective equipment, including respirators. Comments (if applicable):

4. The employee has been counseled regarding the results of this medical evaluation and of any medical conditions resulting from lead exposure that require further evaluation or treatment.

(employee's signature)	(date)

(examiner's signature and stamp)	(date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

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NEHC-TM OM 6260
OCCUPATIONAL EXPOSURE TO METHYLENE CHLORIDE

PHYSICIAN'S/PROVIDER'S WRITTEN OPINION in the case of:

Name	SSN	Dept/Code

1. The above noted individual was examined according to 29 CFR 1910.1052 regarding occupational exposure to methylene chloride. On the basis of this examination the following comments are submitted:
2. A medical condition WAS/WAS NOT detected that would place the employee at an increased risk of material impairment of health from exposure to methylene chloride. Comments (if applicable):
3. Limitations ARE/ARE NOT recommended on this individual's exposure or use of personal protective equipment, including respirators. Comments (if applicable):
4. The employee has been informed that methylene chloride is a potential occupational carcinogen;
5. The employee has been informed of risk factors for heart disease and the potential for exacerbation of underlying heart disease by exposure to methylene chloride through its metabolism to carbon monoxide;
6. The employee has been counseled regarding the results of this medical evaluation and of any medical conditions resulting from methylene chloride exposure that require further explanation or treatment, as noted by his/her signature below.

(employee's signature)	(date)

(examiner's signature and stamp)	(date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

THIS LETTER IS PROTECTED BY THE PRIVACY ACT OF 1974

NEHC-TM OM 6260
OCCUPATIONAL EXPOSURE TO METHYLENEDIANILINE

PHYSICIAN'S/PROVIDER'S WRITTEN OPINION in the case of:

Name	SSN	Dept/Code

1. The above noted individual was examined according to 29 CFR 1910.1050 regarding occupational exposure to cadmium. On the basis of this examination the following comments are submitted:
2. A medical condition WAS/WAS NOT detected that would place the employee at an increased risk of material impairment of health from exposure to methylenedianiline. Comments (if applicable):

3. Limitations ARE/ARE NOT recommended on this individual's exposure or use of personal protective equipment, including respirators. Comments (if applicable):

4. The employee has been counseled regarding the results of this medical evaluation and of any medical conditions resulting from methylenedianiline exposure that require further explanation or treatment, as noted by his/her signature below.

--	--

(employee's signature) (date)

--	--

(examiner's signature and stamp) (date)

Original: employer
Copies: employee
 medical record
 cognizant Industrial Hygienist (IH) (if indicated)

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