

## Standards Improvement Project-Phase IV

### Methylene Chloride Appendix B PRA Public Burden Statement

#### APPENDIX B TO SECTION 1910.1052—MEDICAL SURVEILLANCE FOR METHYLENE CHLORIDE

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#### IV. SURVEILLANCE AND PREVENTIVE CONSIDERATIONS

As discussed above, MC is classified as a suspect or potential human carcinogen. It is a central nervous system (CNS) depressant and a skin, eye and respiratory tract irritant. At extremely high concentrations, MC has caused liver damage in animals. MC principally affects the CNS, where it acts as a narcotic. The observation of the symptoms characteristic of CNS depression, along with a physical examination, provides the best detection of early neurological disorders. Since exposure to MC also increases the carboxyhemoglobin level in the blood, ambient carbon monoxide levels would have an additive effect on that carboxyhemoglobin level. Based on such information, a periodic post-shift carboxyhemoglobin test as an index of the presence of carbon monoxide in the blood is recommended, but not required, for medical surveillance.

Based on the animal evidence and three epidemiologic studies previously mentioned, OSHA concludes that MC is a suspect human carcinogen. The medical surveillance program is designed to observe exposed workers on a regular basis. While the medical surveillance program cannot detect MC-induced cancer at a preneoplastic stage, OSHA anticipates that, as in the past, early detection and treatments of cancers leading to enhanced survival rates will continue to evolve.

##### A. Medical and Occupational History:

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The medical and occupational work history plays an important role in the initial evaluation of workers exposed to MC. It is therefore extremely important for the examining physician or other licensed health care professional to evaluate the MC-exposed worker carefully and completely and to focus the examination on MC's potentially associated health hazards. The medical evaluation must include an annual detailed work and medical history with special emphasis on cardiac history and neurological symptoms.

An important goal of the medical history is to elicit information from the worker regarding potential signs or symptoms associated with increased levels of carboxyhemoglobin due to the presence of carbon monoxide in the blood. Physicians or other licensed health care professionals should ensure that the smoking history of all MC exposed employees is known. Exposure to MC may cause a significant increase in carboxyhemoglobin level in all exposed persons. However, smokers as well as workers with anemia or heart disease and those concurrently exposed to carbon monoxide are at especially high risk of toxic effects because of an already reduced oxygen carrying capacity of the blood.

A comprehensive or interim medical and work history should also include occurrence of headache, dizziness, fatigue, chest pain, shortness of breath, pain in the limbs, and irritation of the skin and eyes.

In addition, it is important for the physician or other licensed health care professional to become familiar with the operating conditions in which exposure to MC is likely to occur. The physician or other licensed health care professional also must become

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familiar with the signs and symptoms that may indicate that a worker is receiving otherwise unrecognized and exceptionally high exposure levels of MC.

An example of a medical and work history that would satisfy the requirement for a comprehensive or interim work history is represented by the following:

The following is a list of recommended questions and issues for the self-administered questionnaire for methylene chloride exposure.

#### QUESTIONNAIRE FOR METHYLENE CHLORIDE EXPOSURE

##### PAPERWORK REDUCTION ACT STATEMENT

Under the methylene chloride standard, this nonmandatory medical disease questionnaire may be administered to employees who are included in their employer's medical surveillance program. (29 CFR 1910.1052(j)(1)). Under the Paperwork Reduction Act, a Federal agency generally cannot conduct or sponsor, and the public is generally not required to respond to, an information collection, unless it is approved by OMB and displays a valid OMB Control Number. Use of this questionnaire is optional. The questionnaire assists both physicians and employers to ensure that the physician obtains compliant employee medical documentation. OSHA estimates employer burden for the completion of this collection of information ranges from 1 hour and 5 minutes (1.08 hours) to 1 hour and 15 minutes (1.25 hours). This estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and, completing and reviewing the collection of information. The time estimate includes employer time for compliance with the underlying information collection requirements in 29 CFR 1910.1052(j), including employee time for completion of the questionnaire and medical examination and providing information to the physician. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to OSHAPRA@dol.gov or to OSHA's Directorate of Standards and Guidance, Department of Labor, Room N-3718, 200 Constitution Ave., NW, Washington, DC 20210; Attn: Paperwork Reduction Act Comment; 1218-0179. (This address is for comments regarding this form only; DO NOT SEND ANY COMPLETED SAMPLE FORM TO THIS OFFICE.)

OMB Approval# 1218-0179; Expires: 00-00-0000

#### I. Demographic Information

1. Name
2. Date
3. Date of Birth
4. Age
5. Present occupation
6. Sex
7. Race (Check all that apply)
  - a. White \_\_\_\_
  - b. Black or African American \_\_\_\_
  - c. Asian \_\_\_\_
  - d. Hispanic or Latino \_\_\_\_
  - e. American Indian or Alaska Native \_\_\_\_
  - f. Native Hawaiian or

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Other Pacific Islander \_\_\_\_

#### *II. Occupational History*

1. Have you ever worked with methylene chloride, dichloromethane, methylene dichloride, or CH<sub>2</sub>Cl<sub>2</sub> (all are different names for the same chemical)? Please list which on the occupational history form if you have not already.
2. If you have worked in any of the following industries and have not listed them on the occupational history form, please do so.

Furniture stripping

Polyurethane foam manufacturing

Chemical manufacturing or formulation

Pharmaceutical manufacturing

Any industry in which you used solvents to clean and degrease equipment or parts

Construction, especially painting and refinishing

Aerosol manufacturing

Any industry in which you used aerosol adhesives

3. If you have not listed hobbies or household projects on the occupational history form, especially furniture refinishing, spray painting, or paint stripping, please do so.

#### *III. Medical History*

##### A. General

1. Do you consider yourself to be in good health? If no, state reason(s).
2. Do you or have you ever had:
  - a. Persistent thirst
  - b. Frequent urination (three times or more at night)
  - c. Dermatitis or irritated skin
  - d. Non-healing wounds
3. What prescription or non-prescription medications do you take, and for what reasons?
4. Are you allergic to any medications, and what type of reaction do you have?

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#### B. Respiratory

1. Do you have or have you ever had any chest illnesses or diseases? Explain.
2. Do you have or have you ever had any of the following:
  - a. Asthma
  - b. Wheezing
  - c. Shortness of breath
3. Have you ever had an abnormal chest X-ray? If so, when, where, and what were the findings?
4. Have you ever had difficulty using a respirator or breathing apparatus? Explain.
5. Do any chest or lung diseases run in your family? Explain.
6. Have you ever smoked cigarettes, cigars, or a pipe? Age started:
7. Do you now smoke?
8. If you have stopped smoking completely, how old were you when you stopped?
9. On the average of the entire time you smoked, how many packs of cigarettes, cigars, or bowls of tobacco did you smoke per day?

#### C. Cardiovascular

1. Have you ever been diagnosed with any of the following: Which of the following apply to you now or did apply to you at some time in the past, even if the problem is controlled by medication? Please explain any yes answers (i.e., when problem was diagnosed, length of time on medication).
  - a. High cholesterol or triglyceride level
  - b. Hypertension (high blood pressure)
  - c. Diabetes
  - d. Family history of heart attack, stroke, or blocked arteries

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2. Have you ever had chest pain? If so, answer the next five questions.
  - a. What was the quality of the pain (i.e., crushing, stabbing, squeezing)?
  - b. Did the pain go anywhere (i.e., into jaw, left arm)?
  - c. What brought the pain out?
  - d. How long did it last?
  - e. What made the pain go away?
3. Have you ever had heart disease, a heart attack, stroke, aneurysm, or blocked arteries anywhere in your body? Explain (when, treatment).
4. Have you ever had bypass surgery for blocked arteries in your heart or anywhere else? Explain.
5. Have you ever had any other procedures done to open up a blocked artery (balloon angioplasty, carotid endarterectomy, clot-dissolving drug)?
6. Do you have or have you ever had (explain each):
  - a. Heart murmur
  - b. Irregular heartbeat
  - c. Shortness of breath while lying flat
  - d. Congestive heart failure
  - e. Ankle swelling
  - f. Recurrent pain anywhere below the waist while walking
7. Have you ever had an electrocardiogram (EKG)? When?
8. Have you ever had an abnormal EKG? If so, when, where, and what were the findings?
9. Do any heart diseases, high blood pressure, diabetes, high cholesterol, or high triglycerides run in your family? Explain.

#### D. Hepatobiliary and Pancreas

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1. Do you now or have you ever drunk alcoholic beverages?  
Age started: \_\_\_\_\_ Age stopped: \_\_\_\_\_.
2. Average numbers per week:
  - a. Beers: \_\_\_\_\_, ounces in usual container:
  - b. Glasses of wine: \_\_\_\_\_, ounces per glass:
  - c. Drinks: \_\_\_\_\_, ounces in usual container:
3. Do you have or have you ever had (explain each):
  - a. Hepatitis (infectious, autoimmune, drug-induced, or chemical)
  - b. Jaundice
  - c. Elevated liver enzymes or elevated bilirubin
  - d. Liver disease or cancer

#### E. Central Nervous System

1. Do you or have you ever had (explain each):
  - a. Headache
  - a. Dizziness
  - b. Fainting
  - c. Loss of consciousness
  - d. Garbled speech
  - e. Lack of balance
  - f. Mental/psychiatric illness
  - g. Forgetfulness

#### F. Hematologic

1. Do you have, or have you ever had (explain each):
  - a. Anemia
  - b. Sickle cell disease or trait
  - c. Glucose-6-phosphate dehydrogenase deficiency
  - d. Bleeding tendency disorder

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2. If not already mentioned previously, have you ever had a reaction to sulfa drugs or to drugs used to prevent or treat malaria? What was the drug? Describe the reaction.