
Arsine

Patient Information Sheet

This handout provides information and follow-up instructions for persons who have been exposed to arsine.

What is arsine?

Arsine is a colorless, flammable gas that does not burn the eyes, nose, or throat. At high concentrations it has a garlic-like or fishy smell, but a person can be exposed to a hazardous concentration of arsine and may not be able to smell it. Arsine is widely used in the manufacturing of fiberoptic equipment and computer microchips. It is sometimes used in galvanizing, soldering, etching, and lead plating. Certain ores or metals may contain traces of arsenic. If water or acid contacts these ores or metals, they may release arsine gas at hazardous levels.

What immediate health effects can result from arsine exposure?

Breathing in arsine gas can be very harmful, even in small quantities. The main effect of arsine poisoning is to destroy red blood cells, causing anemia (lack of red blood cells) and kidney damage (from circulating red-blood-cell debris). Initially, exposed individuals may feel relatively well. Within hours after a serious exposure, the victim may develop headache, weakness, shortness of breath, and back or stomach pain with nausea and vomiting; the urine may turn a dark red, brown or greenish color. The skin may become yellow or bronze in color, the eyes red or green. Generally, the more serious the exposure, the worse the symptoms. Although arsine is related to arsenic, it does not produce the usual signs and symptoms of arsenic poisoning.

Can arsine poisoning be treated?

There is no antidote for arsine, but its effects can be treated. A doctor may give the exposed patient fluids through a vein to protect the kidneys from damage. For severe poisoning, blood transfusions and cleansing of the blood (hemodialysis) may be needed to prevent worsening kidney damage.

Are any future health effects likely to occur?

After a serious exposure, symptoms usually begin within 2–24 hours (see the *Follow-up Instructions*). Most people do not develop long-term effects from a single, small exposure to arsine. In rare cases, permanent kidney damage or nerve damage has developed after a severe exposure. Repeated exposures to arsine over a long period of time might cause skin or lung cancer, but this has not been studied.

What tests can be done if a person has been exposed to arsine?

Specific tests can show the amount of arsenic in urine, but this information may or may not be helpful to the doctor. Standard tests of blood, urine, and other measures of health may show whether exposure has caused serious injury to the lungs, blood cells, kidneys, or nerves. Since toxic effects of arsine poisoning may be delayed, testing should be done in all cases of suspected exposure to arsine.

Where can more information about arsine be found?

More information about arsine can be obtained from your regional poison control center; your state, county, or local health department; the Agency for Toxic Substances and Disease Registry (ATSDR); your doctor; or a clinic in your area that specializes in occupational and environmental health. If the exposure happened at work, you may wish to discuss it with your employer, the Occupational Safety

and Health Administration (OSHA), or the National Institute for Occupational Safety and Health (NIOSH). Ask the person who gave you this form for help in locating these telephone numbers.

Follow-up Instructions

Keep this page and take it with you to your next appointment. Follow *only* the instructions checked below.

- Call your doctor or the Emergency Department if you develop any unusual signs or symptoms within the next 24–72 hours, especially:
- unusual fatigue or weakness
 - shortness of breath
 - abnormal urine color (red or brown)
 - stomach pain or tenderness
 - unusual skin color (yellow or bronze)

No follow-up appointment is necessary unless you develop any of the symptoms listed above.

Call for an appointment with Dr. _____ in the practice of _____.
When you call for your appointment, please say that you were treated in the Emergency Department at _____ Hospital by _____ and were advised to be seen again in _____ days.

Return to the Emergency Department/ _____ Clinic on (date) _____ at _____ AM/PM for a follow-up examination.

Do not perform vigorous physical activities for 1 to 2 days.

You may resume everyday activities including driving and operating machinery.

Do not return to work for _____ days.

You may return to work on a limited basis. See instructions below.

Avoid exposure to cigarette smoke for 72 hours; smoke may worsen the condition of your lungs.

Avoid drinking alcoholic beverages for at least 24 hours; alcohol may worsen injury to your stomach or have other effects.

Avoid taking the following medications: _____

You may continue taking the following medication(s) that your doctor(s) prescribed for you: _____

Other instructions: _____

• Provide the Emergency Department with the name and the number of your primary care physician so that the ED can send him or her a record of your emergency department visit.

• You or your physician can get more information on the chemical by contacting: _____ or _____, or by checking out the following Internet Web sites: _____;

Signature of patient _____ Date _____

Signature of physician _____ Date _____