

AN EMPLOYER'S GUIDE ON PREVENTING OCCUPATIONAL ASTHMA

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INTRODUCTION

Breathing in substances called respiratory sensitizers at work can cause occupational asthma.

Sensitizers are used in a wide range of work activities (see Table 1).

This sheet tells you about the symptoms and effects of occupational asthma and how you can protect your employees from exposure to respiratory sensitizers.

WHAT ARE RESPIRATORY SENSITIZERS?

A respiratory sensitizer is a substance that, when breathed in, can trigger an irreversible allergic reaction in the respiratory system. Once this sensitization reaction has taken place, further exposure to the substance, even in the smallest amount, will produce breathing difficulties.

Sensitization does not usually take place right away. It generally happens after several months or even years of breathing in the sensitizer.

WHAT ARE THE SYMPTOMS OF RESPIRATORY SENSITIZATION?

The symptoms are:

- Asthma** – attacks of coughing, wheezing, chest tightness and shortness of breath
- Rhinitis and conjunctivitis** – runny or stuffy nose and watery or prickly eyes

HOW SOON WILL SYMPTOMS OCCUR?

Once a person is sensitized, symptoms can occur either immediately when they are exposed to the sensitizer or several hours later. If the symptoms are delayed, they are often most severe in the evenings or during the night, so workers may not realize it is work that is causing the problem.

Table 1. Substances responsible for most cases of occupational asthma

<u>Substance Groups</u>	<u>Common activities</u>
Isocyanates	Vehicle spray painting, foam manufacturing
Metal working fluids	Automotive parts manufacturing, stamping plants
Flour/grain/hay	Handling grain at docks, milling, baking
Electronic soldering flux	Soldering, electronic assembly
Laboratory animals	Laboratory animal work
Wood dusts	Saw milling, woodworking
Some glues/resins	Curing of epoxy resins

There are over 300 known asthma-causing agents used in the work place. The Association of Occupational & Environmental Clinics (AOEC) has a web site with an on-line look-up feature to identify asthma-causing agents: <http://www.aoecdata.org/ExpCodeLookup.aspx>

WHAT ARE THE EFFECTS OF CONTINUED EXPOSURE?

Once a person is sensitized, continued exposure can result in permanent damage to their lungs and increasingly severe symptoms. People with rhinitis may go on to develop asthma. Asthma attacks are likely to become worse and can be triggered by other things such as tobacco smoke, general air pollution or even cold air. These attacks often continue for years after exposure to the sensitizer has stopped.

HOW DO I ASSESS THE RISKS?

First, find out whether there is an activity or process in your workplace that uses or creates respiratory sensitizers.

If there is, then ask the following questions:

- Is the sensitizer likely to become airborne in use?
- Are there safer alternatives?
- Who is likely to be exposed, to what concentrations, for how long, and how often?

HOW DO I PREVENT OR CONTROL EXPOSURE?

To do this you will need to think about how you can:

- ...**Stop using** the sensitizer altogether perhaps by replacing it with a less harmful substance;
...or if this is not reasonably practical;
- ...**Segregate work** that may pose a risk; or totally enclose the process;
...or if this is not reasonably practical;
- ...**Partially enclose** the process and provide local exhaust ventilation.

If after carrying out the above you still have not achieved adequate control you will also need to use respiratory protective equipment.

WHAT ABOUT MEDICAL SCREENING?

You will want to set up a system of medical screening if your employees are exposed to respiratory sensitizers.

WHAT SHOULD I DO ABOUT SENSITIZED EMPLOYEES?

If medical screening makes you suspect an employee has been sensitized, you should:

- Remove the individual** from working with the sensitizer and advise them to consult a doctor, giving information on the work they do and the substances they may have been breathing in.
- Review your health and safety** assessment and existing control measures and make any necessary changes.

WHAT DO MY EMPLOYEES NEED TO KNOW?

You will need to inform, instruct and train individuals who are likely to be exposed to respiratory sensitizers so that they know and understand:

- The risks to health;
- The symptoms of sensitization;
- The importance of reporting even seemingly minor symptoms at an early stage;
- The proper use of control measures;
- The need to report promptly any failures in control measures.

WHERE CAN I GET MORE INFORMATION?

Michigan State University, Occupational and Environmental Medicine, West Fee Hall, 909 Fee Road, Room 117, East Lansing, MI 48824-1315 Tel: 517.353.1846 Web site: www.oem.msu.edu Email: ODREPORT@ht.msu.edu

Another resource for information on work-related asthma (and with which much of the information in this guide was developed) is the British Occupational Health Research Foundation web site: www.bohrf.org.uk/projects/asthma.html