How to Work Safely with

How to Work Safely with - Hazardous Products using the "Biohazardous Infectious Materials" Pictogram

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What are biohazardous infectious materials?

These materials are microorganisms, nucleic acids or proteins that cause, or are a probable cause, of infection, with or without toxicity, in humans or animals. Included in this hazard class are bacteria, viruses, fungi and parasites.

The pictogram for this hazardous class looks like three "c"s joined together with a little circle in the middle. The border is a black circle.

Where are Biohazardous infectious materials found in the workplace?

Biohazardous infectious materials are usually found in a hospital, health care facility, laboratory, veterinary practices, and research facilities. Workers in these places do not usually know which tissues or fluids contain dangerous organisms. For this reason, the workers should assume that every sample is hazardous and use appropriate protection at all times. Workers in agriculture, fishery and other industries that process raw plant or animal based materials may also be at risk.

What hazard classes use this pictogram?

Only Biohazardous infectious materials use this pictogram.

What are the hazards of products that have the biohazardous infectious materials pictogram?

For WHMIS 2015, a Biohazardous infectious material is one that falls into Risk Group 2, 3 or 4 as defined by the *Human Pathogens and Toxins Act* or has been shown to be a cause or probable cause of infection or infection and toxicity in animals. The Human Pathogens and Toxins Act definitions are:

- Risk Group 2 means a category of human pathogens that pose a moderate risk to the health of individuals and a low risk to public health and includes the human pathogens listed in Schedule 2. They are able to cause serious disease in a human but are unlikely to do so. Effective treatment and preventive measures are available and the risk of spread of disease caused by those pathogens is low. Some examples of Schedule 2 pathogens are:
    - bacteria such as *Bordetella pertussis* which causes whooping cough
    - viruses such as those that cause hepatitis A, B, C, D and E
    - fungi such as *Aspergillis niger* which causes fungal ear infections
- Risk Group 3 means a category of human pathogens that pose a high risk to the health of individuals and a low risk to public health and includes the human pathogens listed in Schedule 3. They are likely to cause serious disease in a human. Effective treatment and preventive measures are usually available and the risk of spread of disease caused by those pathogens is low. Some examples of Schedule 3 pathogens are:
    - bacteria such as *Mycobacterium tuberculosis* which causes tuberculosis
    - viruses such as human immunodeficiency virus 1 and 2 which causes HIV/AIDS

    - prions such as bovine spongiform encephalopathy agent which causes mad cow disease

- Risk Group 4 means a category of human pathogens that pose a high risk to the health of individuals and a high risk to public health and includes the human pathogens listed in Schedule 4. They are likely to cause serious disease in a human. Effective treatment and preventive measures are not usually available and the risk of spread of disease caused by those pathogens is high. An example of a Risk Group 4 pathogen is the Ebola virus.

WHMIS 2015 has assigned the following signal word and hazard statement:

Hazard Class and Category	Signal Word	Hazard Statement
Biohazardous Infectious Materials – category 1	Danger	(Wording that describes the nature of the hazard)

Are there other hazards associated with products that use the biohazardous infectious materials pictogram?

In addition to the specific hazards identified by the biohazardous infectious materials pictogram, it is important to remember that the product may have other hazards. If the product using this pictogram is also potentially hazardous to humans (e.g., physical or health hazards), it would have the other hazard pictograms to warn about its other properties.

How can products with the biohazardous infectious materials pictogram be handled and stored safely?

Materials in this hazard class should only be used or handled by workers who are appropriately trained, aware of the hazards, and how to control them.

Guidelines on safe handling and storage of human and animal pathogens, toxins and plant pests in laboratories and containment zones are available from the Canadian Biosafety Standards and Guidelines page from the Government of Canada.

Some workplaces may follow routine practices, which are a set of infection control strategies and standards designed to protect workers from exposure to potential sources of infectious diseases. Routine practices are based on the premise that all blood, body fluids, secretions, excretions, mucous membranes, non-intact skin or soiled items are potentially infectious. These practices, while mainly adopted by healthcare providers, apply to all professions in which workers may become exposed to infectious microorganisms through contact with blood and body fluids. Examples of these professions include police officers, trauma/crime scene clean-up crew, zookeepers, laboratory technicians, and embalmers.

In non-healthcare or laboratory settings, workers should be aware of general good practices for sanitation and infection control, including how to work safely with household (chlorine) bleach.

Control measures may include:

- Ventilation (e.g., negative pressure, separate ventilation system)
- Biosafety hoods or cabinets
- Ultra-violet lights for disinfection
- Disposal containers for needles and other sharps
- Self-sheathing needles and lancets
- Sterilization – using high heat, high pressure, or using biocides to kill bacteria
- Worker education and training
- Procedures for disinfection and clean up
- Vaccination, where possible
- Personal protective equipment (PPE) – respirators, gloves, protective clothing, glasses/goggles, face shields, shoe covers
- Personal hygiene, including hand washing and other good practices to reduce the spread of infections and viruses.

What should I do in case of an emergency?

General precautions include the following tips. If you work in a laboratory or healthcare setting, follow your biosafety or infection control guidelines.

- Assume that any body tissue, blood, or fluid – or any item that has been in contact with tissue, blood or fluids – is infectious.
- Exercise caution when handling these materials or items that may contain biohazardous materials.
- Be extra cautious when handling sharp objects to avoid punctures.
- Cover existing cuts with bandages and wear protective gloves (cuts are very vulnerable to infections).
- Wash hands frequently and thoroughly any time you work with these materials or potentially infected items. Keep your hands away from your eyes, nose or mouth.
- Sanitize contaminated areas.

- Report any incidents or exposure to the infection control specialist or other designated person at your workplace.

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