

Receiving, Storage and Transport of Cytotoxic Substances

1. SCOPE

This document describes best practices to follow when cytotoxic substances are received, transported and stored. It applies to consignors and consignees of cytotoxic substances.

2. PURPOSE

Surface contamination of containers and packaging is a potential source of exposure for workers as they unpack and store incoming shipments of cytotoxic substances. Exposure of the workers to cytotoxic substances can be prevented by following the recommended safe work procedures.

3. BACKGROUND

Depending on the quantity of cytotoxic substances handled, facilities are divided into small and large. A large facility stores a quantity of cytotoxic substances requiring a dedicated storage room.

4. RESPONSIBILITY

The Transportation of Dangerous Goods (TDG) regulation defines three main groups of people who handle, offer for transport, or transport dangerous goods and must comply with TDG. These groups are:

- Consignors – anyone who ships the dangerous goods such as manufacturers, distributors, or member of the public.
- Carriers – anyone who transports the dangerous goods such as trucking companies, air cargo companies, and marine shipping companies.
- Consignees – anyone who receives the dangerous goods from a consignor.

The consignee receiving cytotoxic substances needs to have, in addition to their Transport of Dangerous Goods certification, training in the proper handling of cytotoxic substances. The delivered containers should be opened only by trained workers.

5. TRAINING REQUIRED

All workers involved in receiving a cytotoxic substance must receive appropriate training, for example:

- How to use a cytotoxic spill cleanup kit
- What to do with contaminated waste following a spill clean up
- What to do with packages that appear to be damaged

6. MATERIALS/EQUIPMENT

The receiving and storage areas where cytotoxic substances are handled should have the following materials/supplies available:

- A cytotoxic spill cleanup kit (for contents see SWP – [Cytotoxic Spill Cleanup](#))
- Disposable gloves

- Lab coat and/or disposable gown
- Cleaning wipes
- Adsorbent pads
- Cleaning solution

7. HAZARDS

Cytotoxic substances are defined as any chemical substance confirmed or suspected of having a genotoxic, mutagenic or teratogenic effect in humans. This information can usually be obtained from the SDS of the chemical (sections 2 and 11).

Many chemical compounds can fall under the category of cytotoxic compounds; consult the [Exposure Control Plan for Cytotoxic Substances](#) for hazard identification and more information regarding the health hazards associated with exposure to cytotoxic compounds.

There are several activities that can result in exposure:

- Handling incoming shipments of cytotoxic substances that may have surface contamination
- Opening packages containing cytotoxic substances, which could result in the generation of particulates or aerosol
- Handling damaged packaging that has resulted in a leak or spill

8. GUIDELINES FOR SAFE WORK PRACTICES

8.1. Receiving

If facility has a dedicated receiving area

- Purchaser should advise receiving area personnel when a delivery of cytotoxic substance(s) is expected
- Receiving area personnel will check the integrity of the package upon arrival
 - a) Notify the manufacturer or distributor if the container is received in a damaged state
 - b) Never return a damaged container to the manufacturer or distributor
 - c) A cytotoxic spill cleanup protocol should be followed in the event of a damaged package
- If outer package is intact, receiving personnel will notify the buyer to pick-up the package

If cytotoxic substance is received by lab personnel, steps a to c (above) must be completed.

8.2. Unpacking

- Unpacking to be undertaken in a well-ventilated area, preferably vented outside (fume hood, biology safety cabinet class II B2)
- Unpacking will be done above adsorbent mats / pads
- A receptacle for cytotoxic waste in this area will be used for the disposal of secondary packaging and, if necessary, contaminated adsorbent mats
- When unpacking, worker should wear a protective lab coat / gown and two pairs of gloves
- The integrity of all packaging, at every step of the unpacking process, needs to be checked
- A cytotoxic spill cleanup protocol should be followed in the event of a damaged package

- After removing all the packaging layers the container should to be cleaned prior to storage in order to reduce external contamination
 - Pre-moistened cleaning wipes can be used for this purpose
 - Ensure the procedure does not damage the container or interfere with the reading of the label

8.3. Storage – small facility

- The containers can be stored in a secondary containment cleared labeled “Cytotoxic Substances” and placed in the appropriate storage area (e.g. flammable, corrosive, etc.)
- Storage shelves need to be fitted with fall guards, such as lipped edges or barriers
- A list of all cytotoxic drugs present in the workplace must be posted
- When removing or transporting cytotoxic substances out of the storage area, it is recommended that one pair of gloves and a lab coat / gown to be worn
- Containers requiring refrigeration should be placed in a secondary containment cleared labeled “Cytotoxic Substances” and placed the fridge used for chemical storage

8.4. Storage – large facility

In addition to the above (8.3):

- Establish a dedicated, negative-pressure storage area that minimizes the risk of contamination
- A fridge should be available in the storage area for cytotoxic substances requiring refrigeration
- Limit access to the storage area and use signs to indicate restricted entry to authorized personnel only

8.5. Transport

Transport of the cytotoxic substance within the facility must be done with the container sealed and placed in a secondary containment. Syringes containing cytotoxic drug solutions must be transported with the needle cap on and inside a container sealed with a lid.

Transport between facilities must follow [Transportation of Dangerous Goods](#) regulation.

9. EMERGENCY PROCEDURES

For handling damaged containers see UBC’s [Cytotoxic Spill Clean Up](#)

10. DOCUMENT INFORMATION

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