

TDG CHEMICAL SHIPPING PROCEDURES

Chemicals (including samples) being shipped by land or air pose a hazard if the chemical(s) are not packaged properly. Specific requirements that are set out by Transport Canada and Transportation of Dangerous Goods (TDG), for shipment by ground and International Air Transport Association (IATA), for shipment by air must be met when shipping samples from the University. These requirements include the proper classification, packaging and labelling of the samples for transport. Pure chemicals will almost always have a classification and shipping name of their own and can be found directly in Schedule 3 of the TDG Clear Language Shipping Guide. When shipping a pure chemical (manufactured product) it is highly recommended that the shipment is made directly from the supplier to the location as the supplier has all of the proper shipping documentation and packaging in place already.

CLASSIFICATION

1. In order to properly package the sample(s) according to the regulations the properties of the material being shipped must be known. It is the responsibility of the researcher/technician to classify the material so that the shipper (consignor) can properly label and document the shipment.

"The consignor is responsible for determining the classification of dangerous goods. This activity is normally done by, or in consultation with, a person who understands the nature of the dangerous goods such as a manufacturer, a person who formulates, blends or otherwise prepares mixtures or solutions of goods or, in the case of infectious substances, a doctor, scientist, veterinarian, epidemiologist, genetic engineer, microbiologist, pathologist, nurse, coroner or laboratory technologist or technician." (TDG Clear Language, section 2.2)

Schedule 3 of the Transportation of Dangerous (TDG) Act and Regulations lists common chemicals that have a specific shipping name associated with them however "samples" will not be found in this schedule. As a result, the researcher/technician, using their knowledge of the processes involved in making the sample, will be required to identify the hazards associated with the sample and tentatively classify the material. Once this has been done the material can be assigned a proper shipping name and UN number, which the shipper (consignor) can use to process the shipping manifest. By using your knowledge of the sample preparation and expected properties you should be able to classify the sample material. Using the MSDS/SDS of the ingredient chemicals of a sample can help with the classification of a mixture of hazardous and non-hazardous chemicals, however it is not exclusively a means for classification. Answering the questions in the following table will help you to identify the hazards associated with the sample and assign an appropriate shipping name and UN number. The shipping of a sample requires going through a 5 step process before the sample(s) can be safely and properly shipped.

It is essential that all documentation in these steps be properly completed, signed by the appropriate party and that copies of these records be kept by that person (for 5 years) in the event that they need to be produced for authorities as a legal document at a future date.

Step 1 Tentative Hazard Classification

This section is filled-out by the requestor in consultation with their supervisor.

- (a) If you are shipping a pure chemical or a manufacturer's product then you don't need to classify the material. Simply refer to Section 14 of the MSDS/SDS ("Transport Information") and the shipping name, UN # and packing group will be listed there. Go to Step 3. Determination of Appropriate Packaging of the Sample and proceed. However, it is highly recommended that you get the chemical

shipped directly from the manufacturer as they already have all of the necessary packaging and shipping documents in place.

- (b) If the material is any of the following (explosive, a gas, a radioactive or infectious material) then call the Safety Office at ext. 35755. If not, then proceed.
- (c) Complete the form as follows:
 - i. Assign the sample an ID that will be unique to this sample within the package, and that you can easily reference (e.g. Sample A,B,C).
 - ii. Indicate whether the material is a Liquid or Solid'
 - iii. Circle No/Yes regarding classification, and if Yes, circle the waste class indicated
 - iv. Print your name, sign and date the document, and have your supervisor print and sign their name.

Step 2. Determination of Tentative Shipping Name, UN # and Packing Group

Contact Greg Friday (gfriday@uwaterloo.ca or ext. 35755) to arrange to determine the TDG shipping name and accompanying UN # that should be assigned to the sample(s) base on the hazard classes that were identified. He will sign off on Step 2.

Step 3. Determination of Appropriate Packaging of the Sample

- 1. Contact Trevor Beatson (shipper/consignor) (tbeatson@uwaterloo.ca or ext. 36621). He will assist with determining the maximum sample size that can be packaged based on the shipping name and UN # that has been assigned to the sample(s).
- 2. Using the information in Step 2 the sample size (weight/volume of each sample), number of sample vials permitted and the appropriate packaging type will be determined.
- 3. The shipper will complete Step 3 of the form, confirming maximum sample size per vial, maximum number of vials allowed per package and whether a UN-approved package is required.

Step 4. Packaging of Sample

This will be done by the requestor and is based on their knowledge of the sample properties including:

- 1. Whether the sample should be packed in a glass, plastic or metal container
- 2. What absorbent material will best contain the material should the initial container fail
- 3. What secondary containment should be used to contain the sample container (plastic bag, secondary bottle, etc.)
- 4. What packing material should be used to prevent breakage of the container (bubble wrap, packing peanuts, paper, etc.)
- 5. What final UN package is used to enclose the entire sample, secondary containment, sorbent material and outer (sample) packing material

Packaging should be done in consultation with the shipper (consignor) since sample size/volume will dictate whether stringent packaging or excepted/limited quantities provisions apply, as determined in Step 3.

To order containers and UN-approved packaging, go to the compliance Center's website for a complete list of containers and packaging materials. <http://www.thecompliancecenter.com/packaging/>

Step 5. Delivery of the Packaged Sample to Central Stores Shipping

Package is delivered to Central Stores shipper along with the documentation for Step 1 through 4.

All copies of declarations are signed and dated by the appropriate parties. Copies will be kept by the shipper for a period of 5 years.