

# Guidelines for Shipping Samples to the UWChemMRF

[update: 15 January 2007]

## Specific UWChemMRF Requirements:

Samples should be properly prepared for analysis by NMR:

- dissolved in a common deuterated solvent (0.6 mL)
- placed in a clearly labeled 5mm NMR tube (e.g., Wilmad ECONOMY)
- sealed with parafilm or similar.

In some instances, it may be simpler to send samples not dissolved in solvent. An additional fee will be applied depending on the solvent requested (which we will then supply). Make certain your sample will be soluble in the specified solvent; we will not “experiment” with other solvents. In these cases:

- place the proper amount of material within a clearly labeled 5mm NMR tube (e.g., Wilmad ECONOMY), and seal with parafilm or similar
- indicate clearly the NMR solvent to be used to dissolve the sample ( $\text{CDCl}_3$ , acetone- $\text{d}_6$ , benzene- $\text{d}_6$ , acetonitrile- $\text{d}_3$ , methanol- $\text{d}_4$ ,  $\text{D}_2\text{O}$ , DMSO- $\text{d}_6$ ). Indicate whether TMS should be added or not.

No more than ten samples should be included in any one package.

***It is the shipper's responsibility to assure that the samples are properly sealed and packaged.***

A UWChemMRF Sample\_Shipping\_Form must be filled out, one form per sample.

Samples shipped to our laboratory for analysis will be disposed of at the UW. If the sample must be returned to the shipper, an additional fee will apply (cost depending on the type of shipping required).

## Introduction to Shipping Regulations

The following information is introductory only, to assist in orienting users to the issues involved with proper shipping of samples to the UW-Madison Chemistry Magnetic Resonance Facility (UWChemMRF). All persons shipping samples must take full responsibility for following the actual DOT and/or IATA regulations.

Many samples to be shipped by ground for analytical analysis by NMR will fall under the DOT provisions of 49 CFR 173.4, Small Quantity Exceptions. Similar samples to be shipped by air will fall under the International Air Transport Association (IATA) Dangerous Goods Regulations

2.7, Dangerous Goods in Excepted Quantities. The provisions in these regulations are similar, but there are some differences.

Small quantities of material, typically under 30 g or 30 mL (but sometimes 1 g or 1 mL), may fall within the exceptions. The package can contain more than one item. Larger quantities of material, or samples that must be refrigerated will not fall under these exceptions.

The class, "UN number", and packing group for the material(s) must be identified. The package must be adequately sized (e.g., two dimensions of at least 4 inches), correctly labeled (e.g., displaying a 4x4" Dangerous Goods in Excepted Quantities label), and properly packed. The shipping request and label must be filled out and signed by a "knowledgeable" person (someone with Hazmat shipper training).

Under the Dangerous Goods in Excepted Quantities method,  
Allowed classes of materials include:

- Flammable liquid
- Some flammable solids
- Some water reactive substances
- Some oxidizers
- Most toxic substances
- Some corrosive materials

Under the Dangerous Goods in Excepted Quantities method,  
Forbidden classes of materials include:

- Explosives
- Flammable Gas
- Toxic Gas
- Self Reactive substances
- Pyrophoric substances
- Infectious substances
- Radioactive material

These lists are only representative. Table 2.7.A in the Dangerous Goods Regulations is an example that provides precise details.

Some Hazmat shipping regulations are available on the Internet (e.g., google 49 CFR 173.4), but it appears that the IATA Dangerous Goods Regulations are not.

Thanks goes to Doug Wheeler at the U. Wyoming, who was kind enough to provide much detail about the above. Even so, any errors are mine (c.g.fry), and not Doug's.