

# LESSONS TO BE LEARNED

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**Type of Incident:** Dry Ice “Explosion”

**What Happened:** A container of sample vials burst while awaiting pick-up for transport to cold storage.

**Immediate Cause:** The lab tech prepared sample vials for transport to cold storage. She put the vials, wrapped in a plastic bag into a small interior box and then into the screw top container. She added some dry ice to the container. She then screwed the top on and took the container to the reception desk to await pick-up. A few minutes later the pressure built up due to the dry ice sublimating and burst the container.

**Root Causes:**

1. The technician did not follow the proper packaging procedure, since she deemed the package would be too heavy. The prescribed procedure indicates that the screw top container is to be placed in an outer, insulated box with dry ice. The dry ice is not to be placed in the sealed container.
2. Lack of knowledge by the lab technician as to the proper packaging procedures and their significance, i.e. if dry ice is used, the outer package around it must allow for the release of carbon dioxide gas when the solid sublimates.

**Corrective Actions:** Train relevant laboratory personnel in the proper packaging and shipping procedures as well as the chemistry of dry ice. On-line Hazardous Materials Handling training is available on line at [www.uic.edu/depts/envh](http://www.uic.edu/depts/envh) (see “Chemical Safety”). Under “Biological Safety” on this website there is information on shipping biological samples. The packaging procedures are recommended for packaging of samples for on-site transport, as well.

