

LESSONS TO BE LEARNED

Generated from Actual Incidents-Written by EHSO

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Type of Incident: **Researcher Partially Blinded After Cryotube Explosion**

What Happened: A researcher was conducting an experiment that called for the thawing of bacterial strains stored in cryotubes. In the thawing process, one of the cryotubes exploded, blinding the researcher in one eye.

Immediate Cause: The liquid/gas evaporation of cryogenic materials can cause high pressure to build up. If allowed to depressurize, cryogenic liquids will rapidly and violently expand.

Root Causes: Lack of proper personal protective equipment and knowledge of standard operating procedures.

Corrective Actions:

1. Wear appropriate personal protective equipment when working with cryogenic liquids and materials with potential for pressurization. At a minimum, wear safety glasses and a face shield, cryogenic gloves for handling cryogenic materials and nitrile gloves thereafter, a lab coat with long pants, and closed-toe shoes.
2. When working with operations under potential pressure or a vacuum, place the material in a heavy-walled container (e.g., a desiccator) or behind a safety shield or fume hood sash.
3. Be familiar with all the safe standard operating procedures prior to conducting an experiment.
4. Consider using tubes designed specifically for cryogenic storage.

