

Liquid Nitrogen (LN2)

Safe Handling and Use



Overview

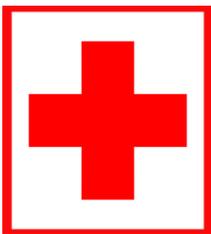
- Liquid nitrogen (LN2) is an inert, odorless, colorless, tasteless, extremely cold, non-corrosive, non-flammable gas with no warning properties. Special care and caution must be taken due to the health hazards associated with LN2.

Health Hazards



- Asphyxiation since we are unable to detect the presence of nitrogen. A small volume of LN2 displaced in a room may be enough to cause an oxygen-deficient atmosphere.
- Frost Bite or Cold Burns can result from direct contact with LN2.
- Fire or explosion due to an oxygen-enriched atmosphere.

First Aid



- **Frostbite Exposure-**
 - Remove any clothing that may restrict circulation to the frozen area
 - Do not rub frozen parts, as tissue damage may result.
 - Place the affected area in a warm water bath that has a temperature not in excess of 105°F (40°C). Never use dry heat.
 - Seek medical attention.

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Personal Protective Equipment-



- **Safety goggles**
 - Eyes are most sensitive to the extreme cold of LN2 and its vapors. Over-pressurization may result in the explosion of improperly vented equipment. Chemical splash goggles must be utilized when handling LN2 and when handling sealed containers that have been stored in LN2 (e.g., cryo-vials).



- **Water proof thermal insulated gloves (e.g. cryogenic gloves)**
 - Never handle dry ice or liquid nitrogen with bare hands.
 - Hands must be protected with water-proof, thermal-insulated, loose-fitting gloves that can be quickly removed if LN2 is spilled on them. Insulated gloves are not intended for submersing hands into LN2.



- **Lab Coats**
 - Body must be protected with pants, lab coats, and closed toe shoes.

Handling and Storage

- Laboratory personnel must be properly trained and familiar with liquid nitrogen prior to beginning any work.
- Laboratory personnel will



- Always wear PPE.
- Use and store liquid nitrogen in well-ventilated areas.
- Store in upright position.
- Use only approved containers with lids to store and transport.
- Never vapor-seal liquid nitrogen containers.
- Never plug, remove, or tamper with any pressure relief valve.