4.3 Describe how to access and use Safety Data Sheets (SDS) for the safe use, handling and disposal of a hazardous product.

The safety data Sheets (SDS) must be easily available to all workers in the workplace at all times. The SDS may be stored in paper form in a binder or electronically on a computer system.

Training on where to find the SDS, how to access and interpret them is required for all workers.

Prior to using the hazardous product, the worker should review the SDS, in its entirety, for important safe use, handing and disposal information.

The following are some examples of where to find some of the information needed for the safe use, handling and disposal of a hazardous product (e.g. liquid nitrogen).

Section 2 – *Hazards identification* quickly identifies the hazard by displaying the hazard pictogram and grouping it with the signal word and hazard statement as highlighted by arrows on Figure 6. Precautionary statements also provide a quick reference in this section.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Refrigerated liquefied gas

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Contains refrigerated gas; may cause cryogenic burns or injury.
May cause frostbite.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Do not change or force fit connections. Avoid spills. Do not walk or roll equipment over spills.

Prevention : Wear cold insulating gloves and face shield.
Use and store only outdoors or in a well ventilated place.

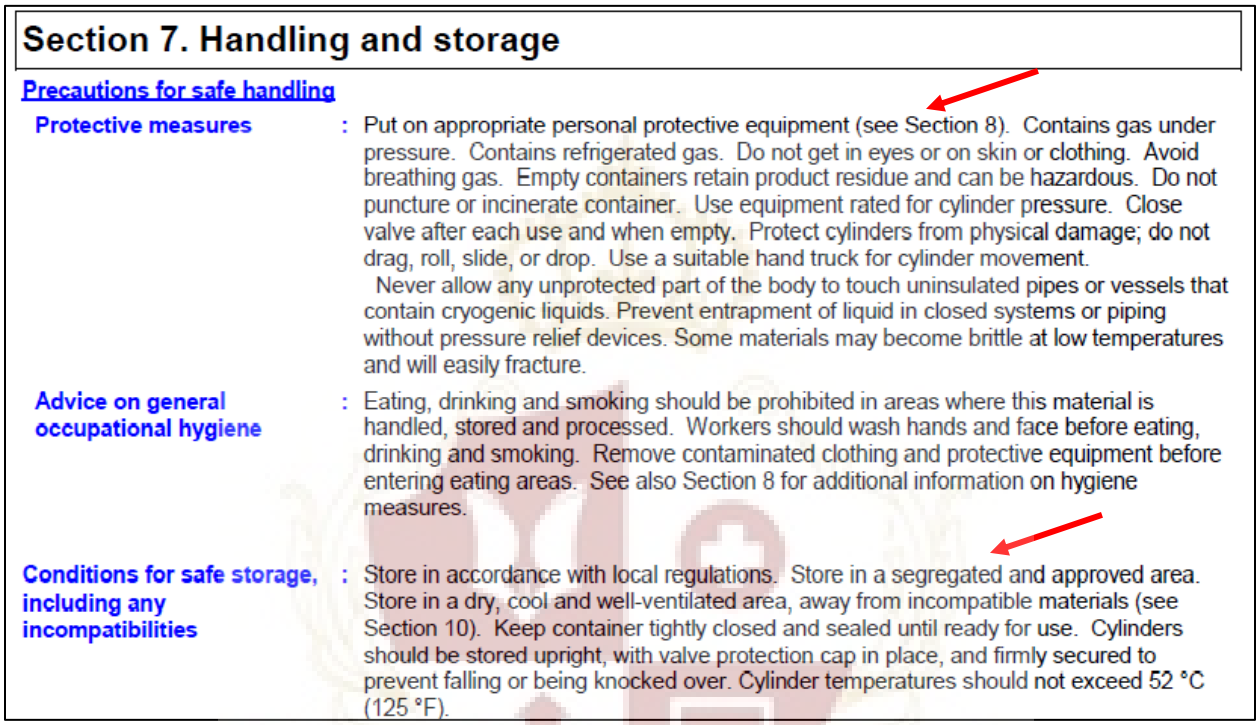
Response : Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical attention.

Storage : Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : Liquid can cause burns similar to frostbite.

Section 7 – *Handling and Storage* provides information on how to safety handle and store the hazardous product. The example in Figure 7 gives instructions for protective measures, occupational hygiene and conditions for safe storage. It refers the worker to Section 8 for information on appropriate personal protective equipment.



Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Contains refrigerated gas. Do not get in eyes or on skin or clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement. Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Figure 7: Safety Data Sheet (SDS) - Section 7 – Handling and Storage

Section 8: *Exposure controls/personal protection* informs the worker of what, if any, personal protective equipment needs to be worn to protect the worker from the hazard. In Figure 8 it is recommended that chemical resistant, impervious gloves be worn at all times and that the gloves must be insulated and suitable for low temperatures. Safe eyewear should also be worn if there is a possibility of exposure to liquid splashes, mist, gases or dust.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
NITROGEN, REFRIGERATED LIQUID	Oxygen Depletion [Asphyxiant]

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Figure 8: Safety Data Sheet (SDS) - Section 8 – Exposure Controls/Personal Protection

Section 13 – *Disposal considerations* provides the worker with information of how to safely dispose of waste, recyclable and non-recyclable products. Figure 9 show that waste should be disposed of safety, complying with the environmental protection and waste disposal legislation of the local authority.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Figure 9: Safety Data Sheet (SDS) - Section 13 – Disposal considerations