

9/03/2022

Liquid nitrogen explosion

14 December 2021

A large explosion has occurred at a cryogenic gas transport depot in Tamworth. A transportation trailer containing 15,000 litres of liquid nitrogen exploded, destroying the container, trailer, and damaging nearby structures. The worker on-site at the time suffered minor injuries from a fall. Debris was scattered over an area of approximately 5,000 square metres.



Container and trailer remnants

Safety information

Consider 'reasonably practicable' control measures to manage the risks associated with the storage of hazardous chemicals and dangerous goods.

Equipment maintenance

Employers should:

- ensure all plant used to handle, store and transport hazardous chemicals is inspected, tested and maintained in accordance with the manufacturer's recommendations

The information contained in this publication is based on knowledge and understanding at the time of writing and the findings are not yet confirmed. SafeWork NSW has commenced an investigation in response to the incident to determine its cause and circumstances. No conclusions should be drawn from the information in this publication about the cause of the incident or the culpability of any party.

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- ensure planned preventative maintenance and inspection programs are carried out at regular intervals, consistent with the manufacturer's instructions or advice provided by other competent persons. If this is not reasonably practicable, inspections and maintenance should be carried out annually. Examples of preventative maintenance and integrity testing include:
 - inspection of glass linings on steel or metal alloy reaction vessels to ensure there are no cracks or holes which might allow contact of incompatible materials with the metal vessel
 - regular checking and maintaining of pressure-relief systems including burst discs on pressure equipment to ensure they are the correct pressure rating for the work being performed
 - checking for signs of corrosion or degradation on tanks, pipework and compressed gas fittings
- regularly check insulation is fit for purpose in insulated pressure equipment - check for abnormal ice build-up or loss of vacuum for vacuum insulated tanks. Remove from service if the insulation is not functioning as intended by the manufacturer
- if preventative maintenance checks show that the integrity of any chemical handling system is in doubt or not performing as it is intended, repair or replacement of the faulty system should be carried out as soon as practicable and before its next use
- fit sensors and controls for liquid levels, pressure and temperature. Sensors need to be calibrated regularly in accordance with the manufacturer's recommendations.

Procedures and training

Employers should:

- implement procedures where only staff who are involved in the use, handling, storage or generation of hazardous chemicals are allowed access to high-risk areas where there may be a greater risk of exposure
- prepare and provide an emergency plan to the emergency services if the quantity of Schedule 11 hazardous chemicals used, handled, or stored at a workplace exceeds the manifest quantity for that hazardous chemical
- provide training to workers on work practices and procedures to be followed in the use, handling, processing, storage, transportation, cleaning up and disposal of hazardous chemicals.

Related information

- [Work Health & Safety Regulation 2017 – Chapter 7 Hazardous Chemicals](#)
- [Managing Risks of Hazardous Chemicals in the Workplace – Code of Practice](#)
- [Managing the Risks of Plant in the Workplace – Code of Practice](#)
- [Dangerous goods – Service NSW](#)

View the latest incident information releases at safework.nsw.gov.au

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