

DECANTING OF LIQUEFIED PETROLEUM GAS (LPG) INTO CYLINDERS

This safety alert highlights the potential danger when decanting LPG into cylinders.

BACKGROUND

Recently, fires broke out at two service stations in Sydney as a result of unsafe practices when decanting LPG into smaller cylinders, such as those used in barbecues. Although no injuries were sustained, significant damage was caused to both properties and a serious threat was posed to workers, members of the public, and surrounding residential and commercial premises.

These incidents highlight the potential danger associated with filling cylinders by decanting. In particular, the risk of fire and explosion when cylinders are over-filled or potential ignition sources, such as static electricity, are not controlled.

WORK HEALTH AND SAFETY REQUIREMENTS

The WHS Act requires persons conducting a business or undertaking (PCBUs) to take all necessary steps to ensure that safe systems of work are implemented and maintained, and workers are provided

with adequate information, training and supervision in the workplace.

Clause 351 of the WHS Regulation outlines specific obligations for those who use, handle, generate or store hazardous chemicals at a workplace, and clause 355 states that an ignition source must not be introduced into a hazardous area.

A hazardous area surrounds an LPG cylinder that is used to decant into smaller cylinders. Potential ignition sources include static electricity and electrical equipment such as ice freezers.

RISK CONTROLS

The following are some of the control measures that should be considered when decanting LPG into cylinders:

- Ensure that cylinders have been inspected and have a current inspection mark.
- Do not use cylinders that are damaged or corroded.
- Do not use cylinders with damaged attachments or leaking hoses.
- Locate the decanting area a safe distance from fuel dispensers, flammable materials, tanks containing dangerous goods, public places, and building entries and exits.

- Ensure LPG cylinders, attachments and associated pipe work is protected from damage – eg ensure the main decanting cylinder is protected from a vehicle collision.
- Ensure no ignition sources – such as ice freezers, static electricity and smoking – are introduced into a hazardous area.
- Ensure operators engaged in LPG decanting are able to demonstrate competency in decanting procedures and emergencies, and in using personal protective equipment (PPE) appropriate for the task.
- Ensure operators understand the nature of static electricity, and the associated controls built into the safety procedures.
- Ensure operators are trained to identify any worn or damaged parts in the decanting equipment.
- Display a notice reading 'Flammable Gas, No Smoking' (with letters at least 50mm high) as close as possible to the decanting area.

- Display a notice that outlines the procedure for decanting, including a warning to stop filling as soon as the maximum permitted level has been reached – as a minimum, the procedure should reflect all the safety requirements outlined in appendix J of AS/NZ1596.
- Ensure that a trained operator is present during the filling process.
- Do not use devices such as a screwdriver, cable ties or jubilee-type clips to hold the deadman's valve open.
- Wear appropriate PPE, such as gloves and safety glasses, during the decanting process – and cotton or anti-static clothes.
- Minimise the risk of static electricity by placing the cylinder to be filled on an electrically conductive stand – do not use a plastic milk crate or any similar type of stand.
- Before turning off the bleed valve, touch the body of the decanting cylinder with bare hands to discharge any static electricity.
- Adequate fire protection must be provided – as a minimum, have a hose reel or powder-type extinguisher available in the decanting area.

The picture below shows an LPG cylinder with the deadman's handle by-passed, which is an unsafe practice.



FURTHER INFORMATION

- *Code of practice: Managing the risks of hazardous chemicals in the workplace* (catalogue no. SW08838)
- *Storage and handling of dangerous goods* (catalogue no. SW08771)
- *AS/NZS1596: 2008 Storage and handling of LP gas*
- *AS/NZS1020: 1995 The control of undesirable static electricity*
- *AS/NZS60079.10.1: 2009 Explosive atmospheres part 10.1: Classification of areas – explosive gas atmospheres*
- The LPG supplier.

Disclaimer

This publication may contain information about the regulation and enforcement of work health and safety in NSW. It may include some of your obligations under some of the legislation that SafeWork NSW administers. To ensure you comply with your legal obligations you must refer to the appropriate legislation.

Information on the latest laws can be checked by visiting the NSW legislation website www.legislation.nsw.gov.au

This publication does not represent a comprehensive statement of the law as it applies to particular problems or to individuals or as a substitute for legal advice. You should seek independent legal advice if you need assistance on the application of the law to your situation.

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