SA HB 148:2016

Handbook

LP Gas leak identification and assessment of in-service road tankers

This Australian Handbook was prepared by Committee ME-015, Storage and Handling—Liquefied Petroleum Gases. It was approved on behalf of the Council of Standards Australia on 10 April 2016.
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The following are represented on Committee ME-015:

- Australasian Fire and Emergency Service Authorities Council
- Australian Gas Association
- Department of Mines and Petroleum, WA
- Department of Natural Resources and Mines, Qld
- EnergySafety, WA
- Engineers Australia
- Gas Appliance Manufacturers Association of Australia
- Gas Energy Australia
- SafeWork New South Wales
- SafeWork SA, South Australian Attorney General's Department
- WorkSafe Tasmania
- WorkSafe Victoria

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Handbook through their representation on the Committee.

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PREFACE

This Handbook was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee ME-015, Storage and Handling—Liquefied Petroleum Gases. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Handbook as an Australian Handbook rather than an Australian/New Zealand Handbook.

This Handbook consists of two components:

(a) Guidance for safe operation of LP Gas road tankers providing—

- details of appropriate Standards;
- links to other codes (e.g. Australian Dangerous Goods Code);
- competencies of personnel in the supply chain;
- air sampling (and other techniques) for identification of gas leaks;
- an escalation process; and
- emergency procedures.

(b) Emergency Action Card (EAC) providing essential information relating to LP Gas and procedures for dealing with the associated hazards.

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FOREWORD

The loss of flammable gas to atmosphere will create a hazardous area where the air/gas mixture exists between the Lower Explosive Limit (LEL) and the Upper Explosive Limit (UEL). The loss of flammable gas to atmosphere is also an expensive loss of valuable cargo and has an adverse impact on the environment.

In all cases, losses of flammable gas to atmosphere should be eliminated or minimized as much as practicable.

Many components used in flammable gas transport (including LP Gas) are designed to allow for certain small losses during normal transport and operation. Those losses may be quantified, for example, for LP Gas hose in AS/NZS 1869.

This Handbook has been developed to improve the management of LP Gas emergencies and to provide expert guidance to transport industry participants and competent authorities.

A typical Emergency Action Card (EAC) is included in Appendix A, where the appropriate corrective actions are also detailed covering most emergency situations.

For all leaks, an assessment is necessary and an appropriate response initiated.

There are a number of Australian and International Standards and transport operations codes that prescribe performance requirements relevant to gas vapour release surrounding an LP Gas tanker. These performance requirements should be taken into consideration when assessing the likelihood of any gas release generating a hazardous area.

STANDARDS AUSTRALIA

Handbook
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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Handbook provides guidelines for in-service leak testing, and the inspection of road tanker vehicles carrying LP Gas. It deals with vehicles that are designed and constructed specifically as road tank LP Gas vehicles.

This Handbook is applicable also to conventional vehicles that carry portable or demountable tanks or tank containers which are filled or emptied whilst on the vehicle and as a consequence are deemed to be a road tank vehicle.

This Handbook provides information on LP Gas delivery system equipment which, as part of its normal operation or performance requirements, may allow small and detectable losses of flammable gas to atmosphere.

1.2 OBJECTIVE

The objective of this Handbook is to provide guidance for authorities, drivers, LP Gas industry business managers and supervisors in identifying and assessing LP Gas leaks from LP Gas delivery system of in-service tankers during operations and roadside inspections. LP Gas delivery system includes all the pipes, fittings, valves and pumps external to the LP Gas pressure vessel and this system is isolated in transit from the LP Gas pressure vessel by a system of isolating valves.

NOTE: The LP Gas delivery system has a limited storage capacity of typically 36 L or less of liquid.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Handbook.

NOTE: For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

AS	
2809	Road tank vehicles for dangerous goods
2809.3	Part 3: Road tank vehicles for compressed liquefiable gases
2865	Confined spaces
AS/NZS	
1869	Hose and hose assemblies for liquefied petroleum gases (LP Gas), natural gas and town gas
60079	Explosive atmospheres
60079.10.1	Part 10.1: Classification of areas—Explosive gas atmospheres (IEC 60079-10-1, Ed.1.0 (2008) MOD)
60079.14	Part 14: Electrical installation design, selection and erection (IEC 60079-14, Ed.4.0 (2007) MOD)
ADG Code	The Australian Code for the Transport of Dangerous Goods by Road and Rail Approved by the Ministerial Council for Road Transport and published by the Australian Government from time to time (referred to as the 'ADG Code')