

SINGAPORE STANDARD

SS 239 : 1980

(ICS 75.160.30)

SPECIFICATION FOR

Liquefied petroleum gas

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CONTENTS

	Page
Foreword - - - - -	4

SPECIFICATION

1. Scope - - - - -	5
2. Definitions - - - - -	5
3. Requirements - - - - -	5
4. Sampling - - - - -	5
5. Tests - - - - -	5
6. Packaging - - - - -	7
7. Marking - - - - -	7

APPENDICES

A. Determination of Vapour Pressure - - - - -	10
B. Determination of Volatility - - - - -	16
C. Determination of Composition - - - - -	21
D. Determination of Residual Matter - - - - -	30
E. Determination of Relative Density - - - - -	33
F. Calculation of Relative Density - - - - -	36
G. Test for Copper Strip Corrosion - - - - -	38
H. Determination of Sulphur Content - - - - -	43

SINGAPORE STANDARD
SPECIFICATION FOR LIQUEFIED PETROLEUM GAS

FOREWORD

This Singapore Standard was prepared by the Technical Committee on Liquefied Petroleum Gas and approved by the Chemical Industry Standards Committee.

In the preparation of this standard, references were made to the following:—

- | | | |
|----|---|--|
| 1. | American Society for Testing and Materials D1855 : 76, Part 24 : 1977 | Specification for Liquefied Petroleum Gases |
| 2. | British Standard 4250 : 1975 | Commercial Butane and Propane |
| 3. | British Standard 5355 : 1976 | Filling Ratios and Developed Pressures for Liquefied and Permanent Gases |
| 4. | Federal Specification BB-G 110A : 1971 | Butane, Propane and Butane-Propane Mixtures |
| 5. | Japanese Industrial Standard K2240 : 1972 | Liquefied Petroleum Gas |
| 6. | South African Bureau of Standards 689 : 1974 | Commercial Butane |
| 7. | South African Bureau of Standards 690 : 1975 | Liquefied Petroleum Gas Mixtures |
| 8. | South African Bureau of Standards 691 : 1974 | Commercial Propane |

The methods of test in this standard were adopted from the American Society for Testing and Materials (ASTM) with modifications to suit the purposes of this standard.

Acknowledgement is made for the use of information from the above references and also the valuable contribution of Mr Lee Tzu Hong in preparing the preliminary draft.

1. SCOPE

This Singapore Standard specifies requirements for liquefied petroleum gas for use as a fuel for domestic, commercial and industrial purposes.

2. DEFINITIONS

For the purpose of this standard, the following definitions shall apply:

2.1 Liquefied Petroleum Gas (LPG). A clear liquid composed of readily liquefiable hydrocarbon gases which are produced in the course of processing natural gas or refining crude oil. The composition of LPG can vary widely depending upon the source and nature of the processes to which it has been subjected.

2.2 Commercial Propane. A hydrocarbon mixture consisting essentially of propane and/or propylene.

2.3 Commercial Butane. A hydrocarbon mixture consisting essentially of butanes.

2.4 Commercial PB Mixture. A hydrocarbon mixture consisting essentially of commercial propane and commercial butane in varying proportions.

3. REQUIREMENTS

3.1 Description. The LPG shall compose predominantly of saturated hydrocarbons (with the exception of commercial propane) and it shall be clear and bright with no evidence of sediment or free water. Acetylene shall be absent. All LPG shall be effectively odourized by an agent of such character as to indicate positively, by a distinct odour the presence of the gas. The odorant shall either be ethyl mercaptan or thiophane. However, with agreement between purchaser and vendor, the LPG may be supplied free from odorant for specific industrial purposes.

When tested in accordance with methods indicated in Table 1, the LPG shall comply with the requirements for the appropriate grade.

3.2 Chemical Characteristics. The LPG covered by this standard shall be classified as set out in Table 1.

4. SAMPLING

The LPG shall be sampled only from the liquid phase. The liquid sample is transferred from the source into a sample container by purging the container and filling it with liquid to 80 per cent of capacity. Since the composition of the LPG may change in the course of withdrawing a large sample, the total volume of sample withdrawn, inclusive of flushing, shall not exceed 2 per cent of the volume being sampled. When more than one test is to be conducted, individual samples drawn at the same point and time shall be taken for testing. No sample shall be transferred from one container to another for a separate test.

5. TESTS

The properties of the LPG specified in Table 1 shall be tested for in accordance with