

SINGAPORE STANDARD

Code of practice for the storage of flammable liquids

(Formerly CP 40)



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liquids**

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Standards
SPRING Singapore
1 Fusionopolis Walk,
#01-02 South Tower, Solaris
Singapore 138628
Email : standards@spring.gov.sg

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The Chemical Standards Committee appointed by the Standards Council consists of the following members:

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Deputy Chairperson	: Ms Lam Kit Wing	<i>Member, Standards Council</i>
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	Dr Yin Xi Jiang / Mr Vincent H H Tan	<i>Singapore Surface Finishing Society</i>
Co-opted Members	: Mr Lim Eng Kiat	<i>Individual Capacity</i>
	Mr Seah Khen Hee	<i>Individual Capacity</i>

The Technical Committee on Petroleum and its Products appointed by the Chemical Standards Committee and responsible for the preparation of this standard consists of representatives from the following organisations:

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		Mr Philip Ying	<i>Individual Capacity</i>

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Foreword

This Singapore Standard Code of Practice was prepared by the Technical Committee on Petroleum and its Products under the direction of the Chemical Standards Committee. It is a revision of CP 40 which has been renumbered as SS 532.

The standard deals with flammable liquids, as classified in the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS). The standard covers flammable liquids of Category 1, 2, 3 and 4 as classified in GHS. In addition, flash point of up to 150 °C is covered in the standard as required by the local regulatory authority. The objective of the standard is to provide guidance and best practices for the safety of persons and the prevention of damage to property when storing or handling flammable liquids. It covers storage and handling of flammable liquids in installations but does not include their transportation.

The revision of this standard includes the best practices and philosophies developed since the last edition, such as the 'Guidelines on storage of flammable and combustible liquids in aboveground atmospheric storage tanks' by Oil and Petrochemical Industry Technical and Safety Committee (OPITSC) and the former Singapore Joint Civil Defence Forces (now known as Singapore Civil Defence Force). The new edition also aligns with the current regulatory authorities, emergency response services, environmental requirements and local publications/standards as well as United Nations guidelines on GHS.

This standard does not override any statutory requirements but should be used in conjunction with such requirements. At the time of publication, this standard is expected to be used by the Singapore Civil Defence Force as part of the fire safety requirements.

In preparing this Singapore Standard, reference was made to the following publications:

- | | |
|--|--|
| 1. Australian Standard AS 1940 : 2004, incorporating its amendment No. 1 | The storage and handling of flammable and combustible liquids |
| 2. South African National Standard SANS 10089-1 : 2003 | The petroleum industry, Part 1 : Storage and distribution of petroleum products in above-ground bulk installations |
| 3. National Fire Protection Association NFPA No. 30 : 2003 Edition | Flammable and combustible liquids code |
| 4. Institute of Petroleum | Model code of safety practice in the petroleum industry, Part 3 – Refining safety code |
| 5. 'Guidelines on storage of flammable & combustible liquids in aboveground atmospheric storage tanks', 1991 edition by Oil and Petrochemical Industry Technical & Safety Committee (OPITSC) and the former Singapore Joint Civil Defence Forces | |
| 6. 'Globally Harmonized System of Classification and Labelling of Chemicals (GHS)', first revised edition, 2005 by United Nations | |

Acknowledgement is made for the use of information from these publications.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. SPRING Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. *Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.*
2. *Compliance with a Singapore Standard does not exempt users from legal obligations.*

Code of practice for the storage of flammable liquids

1 Scope

This Singapore Standard sets out requirements and recommendations for the safe storage and storage handling of flammable liquids, as classified in the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), listed in the Chapter of Flammable Liquids. In addition, the standard also covers liquids of flash point up to 150 °C.

This standard does not apply to the following:

- a) Shipboard installations;
- b) Any storage that is mobile (fuel tanks and tankers, ISO tanks and tankers), except as defined for transit storage purpose;
- c) Any plant or equipment in which liquid is processed, together with any vessels which form an integral part of the processing plant or equipment;
- d) Bitumen and its mixtures prepared for road-making;
- e) Flammable liquids stored in tank exceeding 175 millibar above atmospheric pressure; and
- f) Liquefied gases that are maintained in the liquid phase for storage by means of pressure or refrigeration.

2 Normative references

The following referenced documents are indispensable for the application of this standard. The latest editions of the documents (including any amendments) apply.

API SPEC 6FA	Fire test for valves
API STD 620	Design and construction of large, welded, low-pressure storage tanks
API STD 650	Welded steel tanks for oil storage
API STD 2000	Venting atmospheric and low-pressure storage tanks – Non refrigerated and refrigerated
API RP 2003	Protection against ignitions arising out of static, lightning and stray currents
ASTM D5	Standard test method for penetration of bituminous materials
BS EN 12266-1	Industrial valves. Testing of valves. Pressure tests, test procedures and acceptance criteria. Mandatory requirements
BS EN 12266-2	Industrial valves. Testing of valves. Tests, test procedures and acceptance criteria. Supplementary requirements