

**SS 285:2013(2019)+A1:2019**  
(ICS 71.100.40)

**SINGAPORE STANDARD**

# **Specification for Liquid detergent for hand dishwashing**

Incorporating Amendment No. 1

Confirmed 2019

**SS 285:2013(2019)+A1:2019**  
(ICS 71.100.40)

---

SINGAPORE STANDARD

**Liquid detergent for hand dishwashing**

---

Published by Enterprise Singapore

All rights reserved. Unless otherwise specified, no part of this Singapore Standard may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilming, without permission in writing from Enterprise Singapore. Request for permission can be sent to: [standards@enterprisesg.gov.sg](mailto:standards@enterprisesg.gov.sg).

© Enterprise Singapore

ISBN 978-981-4353-65-6

The content of this Singapore Standard was approved on 25 January 2013 by the Chemical Standards Committee (CSC) under the purview of the Singapore Standards Council.

First published, 1984

First revision, 2013

CSC consists of the following members:

	<b>Name</b>	<b>Capacity</b>
<b>Chairman</b>	: Dr Keith Carpenter	<i>Member, Standards Council</i>
<b>Deputy Chairman</b>	: Dr Tay Kin Bee	<i>Individual Capacity</i>
<b>Secretary 1</b>	: Ms Elane Ng	<i>Standards Development Organisation @Singapore Chemical Industry Council</i>
<b>Secretary 2</b>	: Ms Jillian Chin	<i>Standards Development Organisation @Singapore Chemical Industry Council</i>
<b>Members</b>	: Ms Ang Chin Chin	<i>Maritime and Port Authority of Singapore</i>
	: Ms Feng Ruili	<i>SPRING Singapore</i>
	: Mr Koh Min Ee	<i>National Environment Agency</i>
	: Mr Terence Koh	<i>Singapore Chemical Industry Council Limited</i>
	: Prof Lee Hian Kee	<i>National University of Singapore</i>
	: Dr Lee Tong Kooi	<i>Chemical Metrology Division, Health Sciences Authority</i>
	: Mr Leong Kwai Yin	<i>Individual Capacity</i>
	: Prof Leung Pak Hing	<i>Nanyang Technological University</i>
	: Mr Lim Eng Kiat	<i>Individual Capacity</i>
	: Mr Lim Kian Chye	<i>Housing &amp; Development Board</i>
	: Dr Jerry Liu Jian Lin	<i>Singapore Water Association</i>
	: Dr Loh Wah Sing	<i>Individual Capacity</i>
	: Dr Ng Sek Yeo	<i>Singapore Polytechnic</i>
	: Ms Pamela Phua	<i>Singapore Paint Manufacturers' Association</i>
	: Mr Seah Khen Hee	<i>Individual Capacity</i>
	: Mr Tan Yok Gin / Mr Chia Poh Soo	<i>PUB, the National Water Agency</i>
<b>Co-opted Members</b>	: Prof Andy Hor	<i>Individual Capacity</i>
	: Assoc Prof Thomas Liew	<i>Individual Capacity</i>
	: Mr Nee Pai How	<i>Individual Capacity</i>
	: Mr Pitt Kuan Wah	<i>Individual Capacity</i>
	: Mr Wang Hui Hua	<i>Individual Capacity</i>

CSC sets up the Technical Committee on Chemistry to oversee the preparation of this standard. The Technical Committee consists of the following members:

	<b>Name</b>	<b>Capacity</b>
<b>Chairman</b>	: Mr Leong Kwai Yin	<i>Individual Capacity</i>
<b>Secretary</b>	: Ms Jillian Chin	<i>Standards Development Organisation @Singapore Chemical Industry Council</i>
<b>Members</b>	: Mr Cheah Sin Moh	<i>Singapore Polytechnic</i>

Mr Chia Poh Soo	<i>Public Utilities Board</i>
Ms Veronica Chow	<i>Ministry of Manpower</i>
Dr Gao Feng	<i>Institute of Chemical and Engineering Sciences</i>
Mr Aaron Kalaichelvan / Mr Simon Sim	<i>Industrial Gases Association of Singapore</i>
Mr Koh Chin Yong	<i>National Environment Agency</i>
Prof Lee Jim Yang	<i>National University of Singapore</i>
Mr Lei Zhi Pei	<i>Setsco Services Pte Ltd</i>
Mr Collin Lim	<i>Chemical Industries (Far East) Limited</i>
MAJ Loh Eng Choon / MAJ Lo Wai Mun	<i>Singapore Civil Defence Force</i>
Ms Vivian Mak	<i>Singapore Chemical Industry Council Limited</i>
Ms June Ng	<i>Dow Chemicals Pacific (Singapore) Pte Ltd</i>
Dr Ng How Yong	<i>Singapore Water Association</i>
Ms Ong Kah Kee	<i>Eastman Chemical Singapore Pte Ltd</i>
Dr Richard Yee Cheong Shin Koy Sien	<i>Health Sciences Authority</i>
Dr Sun Changqing	<i>Singapore National Institute of Chemistry</i>
Mr Teah Choon Lee	<i>SPCI Pte Ltd</i>
Mr Philip Yeo Hock Beng / Mr New Chee Wee	<i>Maritime and Port Authority of Singapore</i>

The Technical Committee sets up the Working Group on Fast Moving Consumer Goods (FMCG) to prepare this standard. The Working Group consists of the following experts who contribute in their *individual capacity*:

	<b>Name</b>
<b>Convenor</b>	: Dr Ge Xiaowei
<b>Secretary</b>	: Ms Jillian Chin
<b>Members</b>	: Ms Chong Nyet Chin Dr Khoo Keng Meng Mr Koh Min Ee / Ms Ong Li Lian Mr Lei Zhi Pei Mr Jeff Li Dr Li Sihai Mr Timothy Seah Ms Sulina Tsai

The organisations in which the experts of the Working Group are involved are:

*Diversey Singapore Pte Ltd*

*Environmental Management Association of Singapore*

*Health Sciences Authority*

*Klenco (Singapore) Pte Ltd*

*Lam Soon Singapore Pte Ltd*

*National Environment Agency*

*NTUC FairPrice Co-operative Ltd*

*Procter & Gamble*

*Setsco Services Pte Ltd*

*TUV SUD PSB Pte Ltd*

**Contents**

	<b>Page</b>
Foreword _____	6
1 Scope _____	8
2 Normative references _____	8
3 Requirements _____	8
4 Tests _____	8
5 Sampling and preparation of test samples _____	9
6 Packaging _____	9
7 Stability _____	9
8 Marking _____	9

**Annexes**

A Determination of pH value (normative) _____	10
B Determination of insoluble matter (normative) _____	11
C Determination of anionic surface active agents - Direct two-phase titration method (normative) _____	12
D Primary biodegradability test methods for surfactants in detergents (Informative) _____	16
E Ultimate biodegradability (mineralisation) test methods for surfactants in detergents (Informative) _____	18

**Tables**

1 Requirements of liquid detergent for hand dishwashing _____	8
C.1 Mass of test portions _____	15

## **Foreword**

This Singapore Standard was prepared by the Working Group on FMCG set up by the Technical Committee on Chemistry under the purview of CSC.

Liquid detergents for hand dishwashing may contain surface active agents (surfactants) of the anionic type or a mixture of anionic and non-ionic type. This specification covers only the anionic type which is used widely. Local manufacturers produce mostly liquid detergents for hand dishwashing containing anionic surface agents.

In its course of work, the Committee considered the possibility of specifying a performance test for liquid detergents. However, in this area of product performance testing, it was recognised that there was no single assessment that would give the overall performance of a hand dishwashing product. There were complex variables such as concentrations, temperature, wash process, soil types, the variety of substrates and also the subjectivity in human judgement that would affect the wash end results. Therefore the Committee recommends that when a comparative performance test is required, the general guidelines given in ISO 4198 : 1984 'Surface active agents – Detergents for hand dishwashing – Guide for comparative testing of performance' be consulted.

The committee considered the best protection to the consumer was to set the minimum limit for anionic surface active agents necessary to produce a satisfactory dishwashing detergent.

Besides specifying the detergent to be of the anionic type, the standard also prescribes that the anionic surface active agents shall be biodegradable.

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

- |    |  |  |
|----|--|--|
| 1. | ISO 2271:1989  | Surface active agents – Detergents – Determination of anionic-active matter by manual or mechanical direct two-phase titration procedure |
| 2. | MS 791 : 1982  | Specification for liquid detergent for household hand dishwashing  |
| 3. | SANS 825 : 2011  | Hand dishwashing and light duty detergent (liquid)   |
| 4. | EC Regulation No 648/2004 of the European Parliament and of the Council of 31 March 2004 | Detergents   |

Annexes D and E of this standard were extracted with permission from the Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents – Annex II and Annex III, respectively.

Acknowledgement is made for the use of information from the above references.

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

**NOTE**

- 1. Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions. Where SSs are deemed to be stable, i.e. no foreseeable changes in them, they will be classified as "Mature standards". Mature Standards will not be subject to further review, unless there are requests to review such standards.*
- 2. An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore and the Singapore Standards Council shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR. Although care has been taken to draft this standard, users are also advised to ensure that they apply the information after due diligence.*
- 3. Compliance with a SS or TR does not exempt users from any legal obligations.*



## Specification for liquid detergent for hand dishwashing

### 1 Scope

This standard covers the requirements and methods of test for liquid detergents for hand dishwashing, consisting mainly of anionic surface active agents (surfactants).

### 2 Normative references

The following referenced document is indispensable for the application of this standard. The latest edition of the referenced document (including any amendments) applies.

BS 1647-1      pH measurement. Specification for pH scale