



INDUSTRIAL LUBRICANTS STANDARD

MS1010™

AUG2018

Issued 2002-08
Revised 2012-12
Stabilized 2018-08

Superseding MS1010 DEC2012

Lubricants, Industrial Oils, and Related Products - Type T Turbine Oils - Specification

RATIONALE

This document has been determined to contain basic and stable technology which is not dynamic in nature.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE TETDFLDC2 Fuel and Lubricants TC2 Industrial Lubricants Committee and will no longer be subjected to periodic reviews for currency. Users are responsible for verifying references and continued suitability of technical requirements. Newer technology may exist.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2018 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: [SAE MS1010_201808](#)

SAE values your input. To provide feedback on this Technical Report, please visit http://standards.sae.org/MS1010_201808

Documents
Document Sharing Hub

FOREWORD

The Society of Automotive Engineers (SAE) Industrial Lubricants Committee has developed a number of industrial, non-production lubricant performance specifications.

The purpose of these voluntary SAE specifications is to:

- a. Define minimum performance requirements for industrial lubricants.
- b. Provide lubricant suppliers with performance targets for a minimum number of key industrial lubricants.
- c. Improve the availability of these lubricants to member companies.
- d. Provide a plant oriented, user friendly, classification system using common test standards and properties.

ISO Standard 6743 - Lubricants, industrial oils and related products (class L) - Classification is the foundation for these documents.

- a. Performance characteristics and test procedures are specified.
- b. For information, equivalent ISO, DIN, CEN, BSI, ASTM, AFNOR, CETOP, and IP test methods are referenced.¹

¹ International Standards Organization (ISO)
Deutsches Institut für Normung e. V. (DIN)
European Committee for Standardization (CEN)
American Society for Testing and Materials (ASTM)
Association of Française de Normalisation (AFNOR)
The Energy Institute (EI), formerly The Institute of Petroleum (IP) (NOTE: Now combined with BSI)
British Standards Institute (BSI), BS 2000: XXX where XXX is the corresponding IP number
European Committee on hydraulic Oil and Pneumatics (CETOP)

Industrial lubricant classifications targeted:

- a. Lubricants, Industrial Oils and Related Products - Classification (SAE MS1000)
 - a) General purpose and total loss lubricants (SAE MS1001)
 - b) Gear oils (SAE MS1002)
 - c) Compressor oils (SAE MS1003)
 - d) Hydraulic fluids (SAE MS1004)
 - e) Fire resistant hydraulic fluids (SAE MS1005)
 - f) Lubricants for spindle bearings and associated clutches (SAE MS1006)
 - g) Slideway Lubricants – Specification (SAE MS1007)
 - h) Metal removal fluids (SAE MS1008)
 - i) Pneumatic Tool Oils (SAE MS 1009)
 - j) Lubricating greases (SAE MS1011)

See SAE MS1000 - Index of lubricants and symbols.

NOTE: Environmental, Technical Reports, and/or health and safety regulations may present additional specifications to the supplier.

1. SCOPE

See Table 1.

TABLE 1 - SCOPE AND FIELD OF APPLICATIONS

Code Letter	General Application	Particular Application	More specific Application	Product Type	Symbol	Typical Application
T	Turbines	Steam, direct coupled or geared to the load	Normal service	Highly refined petroleum oil with rust protection and oxidation stability	TSA	Power generation and industrial drives and their associated control systems. Marine drives where improved load carrying ability is not required for the gearing.
			Special properties	Synthetic fluids with no specific fire-resistant properties ⁽¹⁾⁽²⁾	TSC	Power generation and industrial drives and their control systems where special properties of the fluid are advantageous, for example, oxidation stability, low temperature properties.
			Fire-resistant	Phosphate ester lubricant ⁽¹⁾	TSD	Power generation and industrial drives and their associated control systems with need for fire resistance.
			High load carrying ability	Highly refined petroleum oil with rust protection, oxidation stability and enhanced load-carrying ability	TSE	Power generation and industrial drives, and marine geared drives and their associated control systems where the gearing requires improved load carrying ability.
		Gas, direct coupled or geared to the load	Normal service	Highly refined petroleum oil with rust protection and oxidation stability	TGA	Power generation and industrial drives and their associated control systems. Marine drives where improved load carrying ability is not required for the gearing.
			Higher temperature service	Highly refined petroleum oil with rust protection and improved oxidation stability	TGB	Power generation and industrial drives and their associated control systems where high temperature resistance is required due to hot spot temperatures.

¹These products may not be compatible with petroleum based products.²This category includes synthetic hydrocarbons as well as other chemical types.

TABLE 1 - SCOPE AND FIELD OF APPLICATIONS (CONTINUED)

Code Letter	General Application	Particular Application	More specific Application	Product Type	Symbol	Typical Application
			Special properties	Synthetic fluids with no specific fire-resistant properties ⁽¹⁾ ⁽²⁾	TGC	Power generation and industrial drives and their control systems where special properties of the fluid are advantageous, for example, oxidation stability, low temperature properties.
			Fire-resistant	Phosphate ester lubricant ⁽¹⁾	TGD	Power generation and industrial drives and their associated control systems with need for fire resistance.
			High load carrying ability	Highly refined petroleum oil with rust protection, oxidation stability and enhanced load-carrying ability	TGE	Power generation and industrial drives, and marine geared drives and their associated control systems where the gearing requires improved load carrying ability.
		Control system	Fire-resistant	Phosphate ester control fluid	TCD	Steam, gas, hydraulic turbine control mechanisms where fluid supply is separate from the lubricant and fire-resistance is needed.
		Aircraft ⁽³⁾			TA	
		Hydraulic ⁽³⁾			TH	

¹These products may not be compatible with petroleum based products.

²This category includes synthetic hydrocarbons as well as other chemical types.

³Classifications for these categories have not been established.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

Referenced AFNOR, ASTM, BS, CEN, DIN, IP and ISO Standard hardcopies are available from the SAI Global Website <http://www.saiglobal.com>