



INDUSTRIAL LUBRICANT STANDARD

MS1002™

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Lubricants, Industrial Oils, and Related Products Type C (Gears) Specification

RATIONALE

This document has been determined to contain stable technology which is not dynamic in nature. Document is overdue for a revision, but there are no significant changes expected; so the plan is to stabilize it.

STABILIZED NOTICE

This document has been declared "Stabilized" by the SAE 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.

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FOREWORD

The SAE International 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 Institute of Petroleum (IP) NOTE: Now combined with BSI
British Standards Institution (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)
- b. General purpose and total loss lubricants (SAE MS1001)
- c. Gear oils (SAE MS1002)
- d. Compressor oils (SAE MS1003)
- e. Hydraulic fluids (SAE MS1004)
- f. Fire resistant hydraulic fluids (SAE MS1005)
- g. Lubricants for spindle bearings and associated clutches (SAE MS1006)
- h. Slideway lubricants (SAE MS1007)
- i. Metal removal fluids (SAE MS1008)
- j. Lubricants for pneumatic tools (SAE MS1009)
- k. Turbine oils (SAE MS1010)
- l. Lubricating greases (SAE MS1011)

See SAE MS1000 - Index of lubricants and symbols.

NOTE 1: Environmental, Technical Reports, and/or health and safety regulations may present additional specifications to the supplier.

NOTE 2: There can be issues related to the quality of industrial lubricants that fall outside of the scope of this specification.

1. SCOPE

See Table 1.

TABLE 1 - SCOPE, FIELD OF APPLICATION, AND SYMBOLS

Code letter	General Application	Particular Application	More specific application	Composition and special properties	Symbol	Typical applications	Remarks
C	Gears	Enclosed gears	Continuous lubrication by splash circulation or spray	Refined mineral oils with oxidation stability, anti-corrosion (ferrous and non-ferrous metal) and anti-foam properties	CKB	Gears operating under light load	
				Oils of CKB type with enhanced extreme-pressure and anti-wear properties	CKC	Gears operating at a stabilized temperature of oil that remains normal or medium and under high load	See Appendix A
				Oils of CKC type with enhanced thermal/oxidative stability that permits use at a higher temperature	CKD	Gears operating at a high stabilized temperature of the oil and under high load	
				Oils of CKB type ensuring low coefficient of friction	CKE	Gears operating under high friction (e.g., worm gears)	
				Lubricants with oxidation stability, anti-friction and anti-corrosion (ferrous and non-ferrous) properties usable under extreme temperature conditions (low and high)	CKS	Gears operating at a very low, low or very high stabilized temperature of the fluid and under light load	1) See Appendix A 2) Categories of products that require high performance may be synthetic or contain synthetic bases that risk to pose the problem of compatibility with some equipment regularly used with mineral oils

TABLE 1 - SCOPE, FIELD OF APPLICATION, AND SYMBOLS (CONTINUED)

Code letter	General Application	Particular Application	More specific application	Composition and special properties	Symbol	Typical applications	Remarks
				Lubricants of type CKS usable under extreme temperature conditions (low and high) and under high load	CKT	Gears operating at a very low, low or very high stabilized temperature of the fluid and under high load	
			Continuous splash lubrication	Greases with extreme pressure and anti-wear properties	CKG ⁽¹⁾	Gears operating under light load	See Appendix A
	Open gears - may be fitted with safety guards	Intermittent or dip or mechanical application	Products usually of bituminous type with anti-corrosion properties		CKH	Cylindrical or bevel gears operating at medium ambient temperatures and generally under light loads	1) See Appendix A 2) AB oils as defined in Part 1, Type A (Total loss systems) may be used for the same applications as CKJ lubricants 3) These products can be used with a volatile diluent for ease of application (in this case, they shall be designated as follows: CKH-DIL or CKJ-DIL
				Products of CKH type with enhanced extreme- pressure and anti-wear properties	CKJ		
				Greases with improved extreme-pressure, anti- wear and anti-corrosion properties and improved thermal stability	CKL ⁽¹⁾	Cylindrical or bevel gears operating at high or very high ambient temperatures and under high load	See Appendix A
		Intermittent application	Products with improved anti-seizing properties that permit use under extreme load conditions, and products with anti- corrosion properties		CKM	Gears operating occasionally under exceptionally high loads	Products that cannot be sprayed

1. These applications may concern several greases. The grease designation according to ISO 6743-9 shall be indicated by the supplier.