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Superseding J2362 AUG2005

Lubricating Oil, Automotive Engine, API Service SM for Military Administrative Service**1. Scope****1.1 General**

This SAE Standard describes lubricating oils meeting the physical, chemical, and performance requirements of the American Petroleum Institute (API) SM category and the International Lubricant Standardization and Approval Committee (ILSAC) GF-4 standard. These oils are suitable for the lubrication of spark-ignition engines (gasoline engines). This document supersedes the military's Commercial Item Description (CID) A-A-52039.

1.2 Intended Use

The products described in this document are intended for use in administrative type, commercial vehicles equipped with spark-ignition, gasoline consuming engines.

1.3 Rationale

The conversion of the commercial item descriptions (CID) AA-52309 to SAE J2362 in November 1998 was done as an effort to align military needs with commercial manufacturers requirements and suppliers products. It is our belief that the API Engine Oil Licensing and Certification System (EOLCS), the American Chemistry Council (ACC) Petroleum Additives Product Approval Code of Practice, and the International Lubricant Standardization and Approval Committee (ILSAC) provide a robust framework of requirements and oversight to allow the Department of Defense to purchase these products directly, with the understanding that only products with a formal API license and meeting the most current ILSAC requirements will be procured.

2. References**2.1 Applicable Publications**

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

2.1.1 SAE PUBLICATIONS

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J183—Engine Oil Performance and Engine Service Classification (Other than “Energy-Conserving”)
SAE J300—Engine Oil Viscosity Classification

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2.1.2 API PUBLICATION

Available from the American Petroleum Institute, Marketing Department, Program Manager, ESCS Program, 1220 L Street NW, Washington, DC 20005.

API 1509—The API Engine Oil Licensing and Certification System

2.1.3 ASTM PUBLICATIONS

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 97—Test Methods for Pour Point of Petroleum Oils

ASTM D 287—Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)

ASTM D 874—Test Method for Sulfated Ash from Lubricating Oils and Additives

ASTM D 2622—Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry

ASTM D 4485—Performance Specification for Automotive Engine Oils

ASTM D 4629—Test Method for Organically Bound Trace Nitrogen in Liquid Petroleum Hydrocarbons by Oxidative Combustion and Chemiluminescence Detection

ASTM D 4951—Determination of Additive Elements in Lubricating Oils by Inductively Coupled Plasma Atomic Emission Spectrometry

2.1.4 ILSAC PUBLICATION

Available from American Automobile Manufacturers Association, 7430 Second Avenue, Suite 300, Detroit, MI 48202.

ILSAC GF-4—Standard for Passenger Car Engine Oils

2.1.5 GOVERNMENT PUBLICATION

Available from Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19120.

FED-STD-313—Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials
Furnished to Government Activities

FED-STD-791—Lubricants, Liquid Fuels and Related Products; Methods of Testing

2.1.6 U.S. DEPARTMENT OF LABOR (DOL) (OSHA)

Available from the OSHA Publication Office, Room S-4203, 200 Constitution Avenue, NW, Washington, DC 20210.

OSHA 29 CFR 1910.1200—Hazard Communication; Interpretation Regarding Lubricating Oils

3. Classification

3.1 Viscosity Grades

The lubricating oils shall be of the following viscosity grades as defined in SAE J300:

- a. SAE 5W-20
- b. SAE 5W-30
- c. SAE 10W-30

4. Salient Characteristics

4.1 Materials

The engine lubricating oils shall be derived from petroleum fractions, synthetically prepared compounds or a combination of the two types of products. They may be virgin, rerefined stocks, or a combination thereof. The stocks shall be compounded with such functional additives (detergents, dispersants, oxidation inhibitors, corrosion inhibitors, etc.) as are necessary to meet the specified requirements (see Sections 5 and 6).

4.2 Performance

The engine lubricants shall meet the performance requirements of API SM, ILSAC GF-4, and shall carry the American Petroleum Institute (API) donut symbol, as well as the API Certification Mark (starburst symbol).

4.3 Physical and Chemical Requirements

The lubricating oils shall meet all physical and chemical properties required for all previously specified performance levels and those in Table 1. In addition, typical values are to be provided for each salient physical and chemical property listed in Table 1 when tested in accordance with the respective test method (ASTM test procedures are listed where applicable) for each formulation offered at the time of pre-review (see 6.4) and for those properties required to meet the performance level herein specified (see 3.1 and 4.2).

TABLE 1—LUBRICATING OIL PROPERTIES

Property	SAE 5W-20	SAE 5W-30	SAE 10W-30	ASTM Test Procedures
Pour-Point, °C max.	-36	-36	-30	D 97
Stable Pour-Point, °C max	-36	-36	-30	FTM 203
Gravity, API	X	X	X	D 287
Sulfur, mass %	X	X	X	D 2622, D 4951
Sulfated Ash, mass %	X	X	X	D 874
Phosphorus, mass %	X	X	X	D 4951
Nitrogen, mass %	X	X	X	D 4629
Metallic components, mass %	X	X	X	D 4951
X = report typical value				