SAE International™

SURFACE VEHICLE STANDARD

SAE J2362

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Superseding J2362 NOV1998

(R) 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 Petroluem 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

This document was revised from its previous version to bring the performance requirements in harmony with current commercial standards.

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

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

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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				

4.3.1 FORMULATION DATA

The contractor shall provide the name, type, percent, and manufacturer of all base stocks and additive packages for each formulation to be supplied under contract or order, or used in performance testing. Each formulation must be identified by a formula number or oil code, and if more than one code is used for a formulation, then all codes associated with that formulation must be indicated. In addition, the contractor must identify which formulation was used to run each performance test. This information shall be provided to the Lubricant Review Institute Engine Oil Review Committee during the pre-review process (see 6.4).

4.3.1.1 Base Stocks

The contractor shall identify all base stocks used in each formulation offered or used in performance testing by base stock name, manufacturer, and type of base stock according to Appendix E of API 1509. The data listed in Table E-1 (Appendix E - API 1509) shall be included for all base stocks. This information shall be provided to the Lubricant Review Institute Engine Oil Review Committee during the pre-review process (see 6.4).

4.3.1.2 Additives

The contractor shall identify all additive systems used in each formulation offered or used in performance testing by additive package name, manufacturer, and type of additive system (i.e., Detergent Inhibitor (DI), Viscosity Improver Type (OCP, SIP, PMA, etc.), Pour Point Depressant, etc.). If there are read-across between different formulations, then an explanation on how the additive systems relate to one another must be provided. This information shall be provided to the Lubricant Review Institute Engine Oil Review Committee during the pre-review process (see 6.4).

5. Regulatory Requirements

5.1 Hazard Communication Standard

The stocks used shall not be considered carcinogenic or potentially carcinogenic as defined under the Hazard Communication Standard OSHA 29 CFR 1910.1200.

5.2 Toxicity

The engine lubricating oil shall have no adverse effect on the health of personnel when used for its intended purpose. Questions pertinent to this effect shall be referred by the contracting activity to the appropriate departmental medical service who will act as an advisor to the contracting agency. The contractor shall have the toxicological formulations and associated information available for review by the contracting activity to evaluate the safety of the material for its proposed use.

5.3 Recovered Material

The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent possible. When re-refined base stocks are sought, the minimum content to be used in the formulation shall be indicated in the contract or solicitation.

6. Quality Assurance Provisions

6.1 Contractor Certification

The contractor shall certify and maintain substantiating evidence, that the product offered meets the salient characteristics of this document, and that the product conforms to the producer's own drawings, specifications, standards, quality assurance practices, and the information provided in 6.4.

6.2 Market Acceptability (MA)

The contractor shall provide products which have a proven market record based on the number of items sold, length of time the product has been on the market, and reliability and performance of the products as required under the contract or solicitation.

6.3 Inspection and Test

The inspection and testing of products to be supplied under the document shall be as specified in the contract or order.

6.4 Pre-Review Process

Awards will be made only for products which have been pre-reviewed by the Lubricant Review Institute - Engine Oil Review Committee. The attention of the contractors is called to the requirement and manufacturers are urged to arrange to have their products pre-reviewed in order that they may be eligible to be awarded contracts or orders covered by this document. Copies of the Lubricant Review Institute Procedures are available from the Performance Review Institute, Inc., 161 Thornhill Road, Warrendale, PA 15086, Attention: Secretary of the Lubricant Review Institute.

6.5 Qualified Products List

Upon Satisfactory review by the Lubricant Review Institute Engine Oil Review Committee, the product(s) will be listed on the Performance Review Institute's (PRI) Qualified Products List (QPL). This list will be made available through the PRI website at www.pri.sae.org.

7. Packaging

7.1 Preservation, Packaging, Packing, Labeling, and Marking

Preservation, packaging, labeling, and marking shall be as specified in the contract or order. The container will be as specified in the contract or order.

8. Notes

8.1 Ordering Data

The procuring agency should specify the preferred options permitted herein and include the following information in procurement documents: