

Engine Oil Licensing and Certification System

API 1509
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AMERICAN PETROLEUM INSTITUTE

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Downstream Segment

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Foreword

This publication describes the voluntary API Engine Oil Licensing and Certification System (EOLCS) and is intended to explain to marketers how the API Engine Oil Quality Marks are licensed and displayed for the consumer. The publication describes methods for developing new engine oil performance standards and provides the marketer with a description of the API Marks and their use, licensing requirements, aftermarket conformance, and enforcement procedures. It also explains the interaction and roles of the various independent organizations that are part of the API EOLCS.

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Suggested revisions are invited and should be submitted to the Standardization Director, American Petroleum Institute, 200 Massachusetts Ave., N.W., Washington, D.C. 20001, USA.

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Engine Oil Licensing and Certification System

1 Scope

This publication describes the API Engine Oil Licensing and Certification System (EOLCS), a voluntary licensing and certification program designed to define, certify, and monitor engine oil performance deemed necessary for satisfactory equipment life and performance by vehicle and engine manufacturers. Engine oil marketers that meet EOLCS requirements may be licensed to display two Marks, the API Service Symbol and the API Certification Mark.

Sections 2 through 8 of this publication define the current API engine oil service categories and explain the EOLCS licensing requirements, the API Marks and their use, and the EOLCS Aftermarket Audit Program (AMAP). Annexes A through T provide a brief history of engine oil classifications, describe methods for developing new engine oil performance requirements, and explain the interaction and roles of the various independent organizations that are part of the API EOLCS.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

American Chemistry Council Petroleum Additives Panel Product Approval Code of Practice

ASTM D92, Standard Test Method for Flash and Fire Points by Cleveland Open Cup

ASTM D93, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester

ASTM D445, Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)

ASTM D892, Standard Test Method for Foaming Characteristics of Lubricating Oils

ASTM D1552, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method)

ASTM D2007, Standard Test Method for Characteristic Groups in Rubber Extender and Processing Oils and Other Petroleum Derived Oils by the Clay-Gel Absorption Chromatographic Method

ASTM D2270, Standard Practice for Calculating Viscosity Index From Kinematic Viscosity at 40 and 100°C

ASTM D2622, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry

ASTM D2887, Standard Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography

ASTM D3120, Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry

ASTM D3244, Standard Practice for Utilization of Test Data to Determine Conformance with Specifications

ASTM D4294, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy

ASTM D4485, Standard Specification for Performance of Engine Oils

ASTM D4683, Standard Test Method for Measuring Viscosity at High Shear Rate and High Temperature by Tapered Bearing Simulator

ASTM D4684, Standard Test Method for Determination of Yield Stress and Apparent Viscosity of Engine Oils at Low Temperature

ASTM D4741, *Standard Test Method for Measuring Viscosity at High Temperature and High Shear Rate by Tapered-Plug Viscometer*

ASTM D4927, *Standard Test Method for Elemental Analysis of Lubricant and Additive Components, Barium, Calcium, Phosphorus, Sulfur, and Zinc, by Wavelength-Dispersive X-Ray Fluorescence Spectroscopy*

ASTM D4951, *Standard Test Method for Determination of Additive Elements in Lubricating Oils by Inductively Coupled Plasma Atomic Emission Spectrometry*

ASTM D5119, *Standard Test Method for Evaluation of Automotive Engine Oils in CRC L-38 Spark Ignition Engine*

ASTM D5133, *Standard Test Method for Low Temperature, Low Shear Rate, Viscosity/Temperature Dependence of Lubricating Oils Using a Temperature-Scanning Technique*

ASTM D5185, *Standard Test Method for Determination of Additive Elements, Wear Metals, and Contaminants in Used Lubricating Oils and Determination of Selected Elements in Base Oils by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES)*

ASTM D5293, *Standard Test Method for Apparent Viscosity of Engine Oils Between -5 and -30°C Using the Cold-Cranking Simulator*

ASTM D5302, *Standard Test Method for Evaluation of Automotive Engine Oils for Inhibition of Deposit Formation and Wear in a Spark-Ignition Internal Combustion Engine Fueled with Gasoline and Operated Under Low-Temperature Light-Duty Conditions*

ASTM D5480, *Standard Test Method for Motor Oil Volatility by Gas Chromatography*

ASTM D5481, *Standard Test Method for Measuring Apparent Viscosity at High-Temperature and High-Shear Rate by Multicell Capillary Viscometer*

ASTM D5533, *Standard Test Method for Evaluation of Automotive Engine Oils in the Sequence IIIE Spark Ignition Engine*

ASTM D5800, *Standard Test Method for Evaporation Loss of Lubricating Oils by the NOACK Method*

ASTM D5844, *Standard Test Method for Evaluation of Automotive Engine Oils for Inhibition of Rusting (Sequence IID)*

ASTM D6082, *Standard Test Method for High Temperature Foaming Characteristics of Lubricating Oils*

ASTM D6202, *Standard Test Method for Automotive Engine Oils on the Fuel Economy of Passenger Cars and Light-Duty Trucks in the Sequence VIA Spark Ignition Engine*

ASTM D6335, *Standard Test Method for Determination of High Temperature Deposits by Thermo-Oxidation Engine Oil Simulation Test*

ASTM D6417, *Standard Test Method for Estimation of Engine Oil Volatility by Capillary Gas Chromatography*

ASTM D6557, *Standard Test Method For Evaluation of Rust Preventative Characteristics of Automotive Engine Oils*

ASTM D6593, *Standard Test Method for Evaluation of Automotive Engine Oils for Inhibition of Deposit Formation in a Spark-Ignition Internal Combustion Engine Fueled with Gasoline and Operated Under Low-Temperature Light-Duty Conditions*

ASTM D6616, *Standard Test Method for Measuring Viscosity at High Shear Rate by Tapered Bearing Simulator Viscometer at 100°C*

ASTM D6837, *Standard Test Method for Measurement of Effects of Automotive Engine Oils on Fuel Economy of Passenger Cars and Light-Duty Trucks in Sequence VIB Spark Ignition Engine*

ASTM D6794, *Standard Test Method for Measuring the Effect on Filterability of Engine Oils After Treatment with Various Amounts of Water and a Long (6-h) Heating Time*

ASTM D6795, *Standard Test Method for Measuring the Effect on Filterability of Engine Oils After Treatment with Water and Dry Ice and a Short (30-min) Heating Time*

ASTM D6891, *Standard Test Method for Evaluation of Automotive Engine Oils in the Sequence IVA Spark-Ignition Engine*

ASTM D6922, *Standard Test Method for Determination of Homogeneity and Miscibility in Automotive Engine Oils*

ASTM D7097, *Standard Test Method for Determination of Moderately High Temperature Piston Deposits by Thermo-Oxidation Engine Oil Simulation Test-TEOST MHT*

ASTM D7320, *Standard Test Method for Evaluation of Automotive Engine Oils in the Sequence IIIG, Spark-Ignition Engine*

ASTM D8111, *Standard Test Method for Evaluation of Automotive Engine Oils in the Sequence IIH, Spark-Ignition Engine*

ASTM D8114, *Standard Test Method for Measurement of Effects of Automotive Engine Oils on Fuel Economy of Passenger Cars and Light-Duty Trucks in Sequence VIE Spark Ignition Engine*

ASTM D8226, *Standard Test Method for Measurement of Effects of Automotive Engine Oils on Fuel Economy of Passenger Cars and Light-Duty Trucks in Sequence VIF Spark Ignition Engine*

ASTM RR:D02:1204, *Fuel Efficient Engine Oil Dynamometer Test Development Activities, Part II (Sequence VI Test)*

CEC L-36-A-90, *High Temperature/High Shear Viscosity*

CEC L-40-A-93, *Evaporative Loss of Lubricating Oils*

DOD CID A-A-52039A, *Lubricating Oil, Automotive Engine, API Service SG*

DOD MIL-L-2104, *Lubricating Oil, Internal Combustion Engine, Tactical Service*

GM 9099P, *Engine Oil Filterability Test (EOFT)*

GM 9099P, *Engine Oil Filterability Test (EOFT) (Modified), May 1980*

JPI 5S-41-93, *Evaporative Loss*

SAE J183, *Engine Oil Performance and Engine Service Classification (Other Than “Energy-Conserving”)*

SAE J300, *Engine Oil Viscosity Classification*

SAE J357, *Physical and Chemical Properties of Engine Oils*

SAE J1423, *Classification of Energy-Conserving Engine Oil for Passenger Cars, Vans, and Light-Duty Trucks*

3 Terms and Definitions

For the purposes of this document, the terms and definitions in Annex I apply.

4 EOLCS Overview

4.1 The API EOLCS is designed to define, certify, and monitor engine oil performance that vehicle and engine manufacturers and the oil and additive industries deem necessary for satisfactory equipment life and performance. The system includes a formal license agreement executed by the marketer with API. The program's Marks are intended to help the consumer identify products that have satisfied the requirements for licensing and certification. The system includes an audit process to verify that licensed products in the marketplace comply with the terms of the API Licensing Agreement.

4.2 API issues a license to an oil marketer after the marketer confirms it has met all the requirements spelled out in this publication and the EOLCS Online Application (<http://engineoil.api.org>). The marketer must execute the API Licensing Agreement as a condition of licensure.

Note: An oil marketer is defined as the marketing organization responsible for the integrity of the brand name and the representation of the branded product in the marketplace.

4.3 Performance requirements, test methods, and limits are cooperatively established by vehicle and/or engine manufacturers [namely, some or all of those represented by the Alliance of Automobile Manufacturers; Japan Automobile Manufacturers Association (JAMA); and Truck and Engine Manufacturers Association (EMA)], technical societies such as ASTM and SAE, and trade associations such as API and the American Chemistry Council (ACC).

4.4 API licenses two types of Marks: the API Service Symbol and the API Certification Mark. The Service Symbol denotes a licensed oil's performance properties through the API Service Categories; the SAE viscosity; and, if applicable, the Resource Conserving, ~~Energy Conserving~~, CI-4 PLUS, and SN PLUS classifications. The API Certification Mark identifies oils meeting International Lubricant Specification Advisory Committee (ILSAC) minimum performance standards.

4.5 API uses an alphanumeric system known collectively as API Service Categories to define specific engine oil performance standards. These categories are commonly used by vehicle, engine, and equipment manufacturers to identify the engine oil performance standards required by gasoline and diesel engines. The API Service Symbol displays current API Service Categories. The process for developing API "C" categories is explained in Annex D.

The API Certification Mark does not change. Annual licenses for the API Certification Mark are issued only for engine oils that meet the current ILSAC performance requirements specified in Annex Q. The process for developing new engine oil performance standards for the API Certification Mark is explained in Annex C. At any time during this process, API's Lubricants Standards Group may ask ASTM or other bodies to recommend specifications for passenger car motor oils not addressed by the ILSAC minimum performance specification. This may include the API Lubricants Standards Group itself formulating a standard for a separate engine oil quality category based on deviations/exceptions from the specification being considered during the Annex C process. A Lubricants Standards Group passenger car motor oil standard would be designated as an API S Service Category.

4.6 Engine oils licensed to use the API Service Symbol and/or the API Certification Mark must be engine tested using the latest edition of the ACC Petroleum Additives Panel Product Approval Code of Practice (ACC Code). The ACC Code requires advance registration of all engine tests along with criteria for handling results from multiple tests on an oil formulation to improve the measurement of the oil's performance (see Annex N). Material updates to the ACC Code will be distributed to ILSAC, EMA, and API sufficiently in advance of formal publication to permit consideration of any comments the three stakeholders may have. Adherence to the ACC Code as a requirement for the API EOLCS will be periodically reviewed for continued suitability and enhancement.

4.7 The ACC Code currently includes only certain engine tests. For engine oils that use the API S and C Service Categories and/or the Resource Conserving, CI-4 PLUS, and SN PLUS classifications, the engine tests covered by the ACC Code shall be conducted in accordance with the ACC Code.

4.8 The ultimate assessment of an engine oil's performance includes a variety of vehicle fleet tests that simulate the full range of customer driving conditions. The engine sequence and bench tests listed in this document have been

specified instead of fleet testing to minimize testing time and costs. These specific tests were selected to mimic challenging field conditions and have been judged to be predictive of and applicable to a variety of vehicle tests under similar field conditions. The tests were vetted and agreed to in open forums operated under the auspices of organizations such as API, ASTM, and SAE. The relationships between engine sequence tests and vehicle fleet tests are judged valid based only on the range of base oils and additive technologies investigated — generally those that have proven to have satisfactory performance in service and that are in widespread use at this time. It is the responsibility of licensees introducing base oils or additive technologies that constitute a significant departure from existing practice to ensure that there is no adverse effect to vehicle components or to emission control systems by ensuring that sufficient supporting vehicle fleet testing data has been generated. This vehicle fleet testing should be conducted in addition to the other performance requirements listed in this specification. No marketer can claim to be acting in a reasonable and prudent manner if the marketer knowingly uses a new technology — defined as a significant departure from existing industry practice — based only on the results of engine sequence testing without verifying the suitability of the new technology in vehicle fleet testing that simulates a reasonable range of customer operation.

In addition to the requirements for API licensure, marketers should assess all products produced under API licenses using generally accepted quality control measures for adherence to the expected rheological properties submitted in the EOLCS Online Application, their products' specific elemental composition, and other category requirements that may indicate product compliance (Licensed Fingerprint) for such product prior to release for sale. Additionally, the API AMAP program will inspect lubricants in the marketplace for these same properties as further assurance of API license compliance.

Marketers are responsible for confirming that adding identification markers to an oil formulation does not impact that oil's performance. Such markers can include dyes, fragrances, isotopic markers, or any other chemical identifier.

4.9 The oil marketer of products claiming any API Service Category is responsible for ensuring the oil meets the API category requirements. In addition to the support data available in the ACC Candidate Data Package, the oil marketer shall have sufficient data to ensure that the inclusion of any nonperformance-related materials into the oil formulation such as for product identification maintains the performance of the oil to be licensed consistent with the licensable quality level being sought.

4.10 The test data that support product claims are the responsibility of the individual marketer. The API Lubricants Standards Group through its Base Oil Interchange (BOI)/Viscosity Grade Read Across (VGRA) Task Force develops Base Oil Interchange and SAE Viscosity-Grade Engine Testing Guidelines.

4.11 The API Lubricants Standards Group and BOI/VGRA Task Force will determine if additional testing is required per the matrix testing described in Annex C or Annex D for the new engine tests to ensure that sufficient data is available to allow the establishment of appropriate Base Oil Interchangeability and Viscosity-Grade Engine Testing Guidelines simultaneous with the establishment of the category performance criteria. Alternatively, companies may put forth engine test data supporting new read-across or interchange guidelines for adoption through balloting.

4.12 Marketers may choose to use the API Base Oil Interchangeability Guidelines, the API Guidelines for SAE Viscosity-Grade Engine Testing, or both in lieu of specified engine testing. However, the decision to use such guidelines does not absolve the marketer of the responsibility to ensure that each licensed engine oil satisfies all engine and bench testing performance requirements.

4.13 Previous sections notwithstanding, the oil marketer shall not interchange any base stock within a licensable formulation that could result in compromising the intended performance of that formulation against that license.

4.14 All engine oils licensed to use the API Marks are subject to conformance audits. Conformance is determined by comparing measured physical and chemical properties of the oil with licensing data on file at API. In addition, a limited number of products may be randomly selected for engine and bench testing.

4.15 An Administrative Guidance Panel (AGP) has been established in accordance with the terms of a Memorandum of Understanding between API and Ford, General Motors, and Chrysler for the purpose of providing guidance to the EOLCS. An Interindustry Advisory Group (IAG; see Annex B) consisting of representatives from organizations such as API, ASTM, ACC, EMA, Independent Lubricant Manufacturers Association (ILMA), Ford, General Motors, Chrysler, SAE, and the U.S. Army has been formed to advise the AGP on enhancements and improvements to the API EOLCS. Recommendations by the IAG will be considered for inclusion in the program.

5 Description of API Marks

5.1 General

5.1.1 API licenses two types of Marks: the API Certification Mark “Starburst” and the API Service Symbol “Donut.” On May 1, 2020, API will begin licensing a third mark, the API Certification Mark “Shield.” Certain oils are capable of meeting the technical and licensing requirements of two of the marks. If properly licensed, these engine oils may be labeled with either or two API Marks. Examples of these three types of Marks are shown in Figures 1 and 2.

5.1.2 API’s licensing of an engine oil does not imply that oils with the API Marks are appropriate for all vehicles or engines in the field. The consumer must refer to the owner’s or operator’s manual for specific vehicle or engine manufacturer’s engine oil recommendations.

5.2 API Certification Marks “Starburst” and “Shield”

5.2.1 Each API Certification Mark is designed for the identification of engine oils recommended for a general application (for example, gasoline, fuel-flexible, and light-duty diesel). The API Certification Marks Starburst and Shield may be licensed only if an oil satisfies the requirements of the most recent and applicable ILSAC minimum performance standards specified in Annex Q. The API Starburst remains the same for a given application even if a new minimum engine oil performance standard is developed for the application (see Annex C). The viscosity within the API Shield may be changed if new viscosities are added to the requirements in Annex Q, paragraph Q.6.



Figure 1—API Certification Marks Starburst and Shield

5.2.2 The ILSAC GF-5 minimum performance standard for passenger car motor oils (see Annex Q, paragraph Q.5) provides the current basis for issuance of a license to use the API Certification Mark. (See 5.4 for a list of viscosity grades eligible to obtain a license to use the API Certification Mark). On May 1, 2020, API-licensed oils that meet the criteria for ILSAC GF-6A will be eligible to display the API Starburst, and API-licensed oils that meet ILSAC GF-6B will be eligible to display the API Shield (see Annex Q, paragraph Q.6).

5.3 API Service Symbol

5.3.1 General

Service Categories are placed in the upper portion of the API Service Symbol to identify specific engine oil performance standards. The API Service Symbol may be licensed for use with passenger car motor oils, diesel engine oils, or both if the oils meet the performance standards of an appropriate API Service Category or Categories. Currently, the API Service Categories that may be included in the API Service Symbol are SN, SM, SL, SJ, ~~SH (when preceded by a C category)~~, CH-4, CI-4, CJ-4, CK-4, and FA-4 (note that FA-4 cannot appear in the API Service Symbol with any C Service Category). On May 1, 2020, API SP may be included in the Service Symbol. Oils that meet API CI-4 licensing requirements are also authorized to display CH-4 in the API Service Symbol. Oils that meet API CJ-4 licensing requirements are also authorized to display CI-4 with CI-4 PLUS, CI-4, and CH-4 in the API Service Symbol. Oils that meet API CK-4 licensing requirements are also authorized to display CJ-4, CI-4 with CI-4 PLUS, CI-4, and CH-4 in the API Service Symbol. SAE 0W-16 and 5W-16 oils may only be licensed as API SN. Beginning May 1, 2020, SAE 0W-16 and 5W-16 oils may be licensed as API SP.

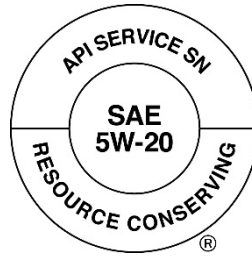


Figure 2—API Service Symbol

Note: The letters “SI”, “SK”, and “SO” (as of May 1, 2020) have been **or will be** omitted from the sequence of letter designators for API Service Categories because of their common association with other organizations or systems.

Use of more than one API S Service Category at a time in the API Service Symbol is prohibited. ~~Service Category SH can be displayed in the API Service Symbol only when preceded by CH-4 and/or CI-4, and/or CJ-4.~~ These alphanumeric Service Categories may change as new oil performance standards are developed and approved for use (see Annex D).

For an oil that is formulated for diesel engine applications and meets both C and S Categories, ~~it is suggested that~~ the C Service Category **should** be put first so that the consumer can recognize that the oil is primarily a diesel engine oil but also meets S Service Category requirements. For an oil that is formulated for passenger car motor oil applications and meets both S and C Service Categories, ~~it is suggested that~~ the S Service Category **should** be put first so that the consumer can recognize that the oil is primarily a passenger car motor oil but also meets C Category requirements.

5.3.2 Service Categories for Passenger Car Motor Oils

5.3.2.1 SP—2020 Gasoline Engine Warranty Maintenance Service

API Service Category SP was adopted for use in describing engine oils available in 2020. These oils are for use in service typical of gasoline engines in current and earlier passenger cars, sport utility vehicles, vans, and light-duty trucks operating under vehicle manufacturers’ recommended maintenance procedures. Vehicle owners and operators should follow their vehicle manufacturer’s recommendations on engine oil viscosity and performance standard.

Engine oils that meet the API Service Category SP designation (see Annex G) may be used where API Service Category SN and earlier S categories have been recommended.

Engine oils that meet the API Service Category SP designation have been tested in accordance with the ACC Code and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Engine Testing (see Annexes E and F).

Engine oils that meet these requirements may display API Service Category SP in the upper portion of the API Service Symbol beginning May 1, 2020.

5.3.2.2 SN—2011 Gasoline Engine Warranty Maintenance Service

API Service Category SN was adopted for use in describing engine oils available in 2011. These oils are for use in service typical of gasoline engines in current and earlier passenger cars, sport utility vehicles, vans, and light-duty trucks operating under vehicle manufacturers’ recommended maintenance procedures. Vehicle owners and operators should follow their vehicle manufacturer’s recommendations on engine oil viscosity and performance standard.

Engine oils that meet the API Service Category SN designation (see Annex G) may be used where API Service Category SM and earlier S categories have been recommended.

Engine oils that meet the API Service Category SN designation have been tested in accordance with the ACC Code and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Engine Testing (see Annexes E and F).

Engine oils that meet these requirements may display API Service Category SN in the upper portion of the API Service Symbol.

5.3.2.3 SM—2005 Gasoline Engine Warranty Maintenance Service

API Service Category SM was adopted for use in describing engine oils available in 2004. These oils are for use in service typical of gasoline engines in current and earlier passenger cars, sport utility vehicles, vans, and light-duty trucks operating under vehicle manufacturers' recommended maintenance procedures.

Engine oils that meet the API Service Category SM designation (see Annex G) may be used where API Service Category SL and earlier S Categories have been recommended.

Engine oils that meet the API Service Category SM designation have been tested in accordance with the ACC Code and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Engine Testing (see Annexes E and F).

Engine oils that meet these requirements may display API Service Category SM in the upper portion of the API Service Symbol.

5.3.2.4 SL—2001 Gasoline Engine Warranty Maintenance Service

API Service Category SL was adopted for use in describing engine oils available in 2001. These oils are for use in service typical of gasoline engines in current and earlier passenger cars, sport utility vehicles, vans, and light-duty trucks operating under vehicle manufacturers' recommended maintenance procedures.

Engine oils that meet the API Service Category SL designation (see Annex G) may be used where API Service Category SJ and earlier S Categories have been recommended.

Engine oils that meet the API Service Category SL designation have been tested in accordance with the ACC Code and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Engine Testing (see Annexes E and F).

Engine oils that meet these requirements may display API Service Category SL in the upper portion of the API Service Symbol.

5.3.2.5 SJ—1997 Gasoline Engine Warranty Maintenance Service

API Service Category SJ was adopted for use in describing engine oils available in 1996. These oils are for use in service typical of gasoline engines in passenger cars, sport utility vehicles, vans, and light-duty trucks operating under vehicle manufacturers' recommended maintenance procedures.

Engine oils that meet the API Service Category SJ designation (see Annex G) may be used where API Service Category SH and earlier S Categories have been recommended.

Engine oils that meet the API Service Category SJ designation have been tested in accordance with the ACC Code and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Engine Testing (see Annexes E and F).

Engine oils that meet these requirements may display API Service Category SJ in the upper portion of the API Service Symbol.

~~5.3.2.5 SH—1994 Gasoline Engine Warranty Maintenance Service~~

~~API Service Category SH was adopted in 1992 for use in describing engine oils available in 1993. These oils are for use in service typical of gasoline engines in passenger cars, vans, and light-duty trucks operating under vehicle manufacturers' recommended maintenance procedures.~~

~~Engine oils developed for this Service Category provide performance exceeding the minimum requirements for API Service Category SG, which Service Category SH was intended to replace, in the areas of controlling deposits, oil~~

~~oxidation, wear, rust, and corrosion and must meet the engine protection sequence test requirements of DOD CID-A-A-52039A (document obsolete) and ILSAC GF-1. In addition, all viscosity grades designated in DOD CID-A-A-52039A (SAE 5W-30, 10W-30, and 15W-40) must meet the bench test requirements described in DOD CID-A-A-52039A and ILSAC GF-1. (SAE 15W-40 does not have a phosphorus limitation and does not have to meet the GM filterability test.)~~

~~Engine oils that meet the API Service Category SH designation (see Annex G) have been tested in accordance with the ACC Code, may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Engine Testing (see Annexes E and F), and may be used where API Service Category SG and earlier S Categories have been recommended.~~

~~Engine oils that meet these requirements may not display API Service Category SH in the upper portion of the API Service Symbol unless SH is preceded by a C Category.~~

5.3.2.6 **Resource** Conserving Oil Classification for Gasoline-Powered Passenger Cars, Sport Utility Vehicles, Vans, and Light-Duty Trucks

5.3.2.6.1 General

The **Resource** Conserving oil classification for gasoline-powered passenger cars, sport utility vehicles, vans, and light-duty trucks is a supplementary classification for engine oils that have **resource** conserving properties and is displayed—when used—in the lower portion of the API Service Symbol. The performance requirements for this supplementary classification are described technically in SAE J1423 and ASTM D4485 (latest version). Testing for conformance to **this classification** must be in accordance with the ACC Code. The API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Engine Testing (see Annexes E and F) may be used.

5.3.2.6.2 **Resource Conserving in Conjunction with API Service Category SP**

API Service SP engine oils designated as Resource Conserving are formulated to help improve fuel economy and protect vehicle emission system components in passenger cars, sport utility vehicles, vans, and light-duty trucks powered by gasoline engines. These oils have demonstrated a fuel economy improvement (FEI) in a specific sequence test at the percentages listed in Table 1 when compared with a baseline oil (BL). Additionally, these oils have demonstrated in other tests listed in Table 1 that they provide greater emission system and turbocharger protection and help protect engines when operating on ethanol-containing fuels up to E85.

Many previous S Categories made reference to “Energy Conserving,” but this reflected an emphasis on fuel-economy performance alone. Resource Conserving in conjunction with API SP focuses on fuel economy, emission system and turbocharger protection, and compatibility with ethanol-containing fuel up to E85.

Starting May 1, 2020, oils that have passed the tests at the limits shown in Table 1 and are properly licensed by API may display “Resource Conserving” in the lower portion of the API Service Symbol in conjunction with API Service SP in the upper portion. The fuel economy and other resource conserving benefits obtained by individual vehicle operators using engine oils labeled Resource Conserving may differ because of many factors, including the type of vehicle and engine, engine manufacturing variables, the mechanical condition and maintenance of the engine, oil that has been previously used, operating conditions, and driving habits. Before the May 1, 2020, introduction date, oil marketers may license oils meeting Resource Conserving in conjunction with API Service SP as Resource Conserving in conjunction with API Service SN.

**Table 1—Resource Conserving Primary Performance Criteria with
API Service Category SP**

Performance Test	Performance Criteria	
	FEI SUM	FEI2 minimum after 125 hours aging
Sequence VIE (ASTM D8114) ^a		
Viscosity Grade		
XW-20	3.8%	1.8%
XW-30	3.1%	1.5%
10W-30 and all other viscosity grades not listed above	2.8%	1.3%
Sequence VIF (ASTM D8226) ^a		
Viscosity Grade		
XW-16	4.1%	1.9%
Sequence IIIB (ASTM D8111)	81% phosphorus retention min	
Emulsion Retention (ASTM D7563)	No water separation	
High Temperature Deposits, TEOST 33C (ASTM D6335), Total Deposit Weight, mg		
SAE XW-16, 0W-20	Not Required	
All other viscosity grades	30 max	

^aViscosity grades are limited to 0W, 5W and 10W multigrade oils.

5.3.2.6.3 Resource Conserving in Conjunction with API Service Category SN

API Service SN engine oils designated as Resource Conserving are formulated to help improve fuel economy and protect vehicle emission system components in passenger cars, sport utility vehicles, vans, and light-duty trucks powered by gasoline engines. These oils have demonstrated a fuel economy improvement (FEI) in a **specific sequence** test at the percentages listed in Table 2 when compared with a baseline oil (BL) used in the **Sequence VID** test. Additionally, these oils have demonstrated in **other** tests listed in Table 2 that they provide greater emission system and turbocharger protection and help protect engines when operating on ethanol-containing fuels up to E85.

Many previous S Categories made reference to “Energy Conserving,” but this reflected an emphasis on fuel-economy performance alone. Resource Conserving in conjunction with API SN focuses on fuel economy, emission system and turbocharger protection, and compatibility with ethanol-containing fuel up to E85.

Starting October 1, 2010, oils that have passed the tests at the limits shown in Table 2 and are properly licensed by API may display “Resource Conserving” in the lower portion of the API Service Symbol in conjunction with API Service SN in the upper portion. The fuel economy and other resource conserving benefits obtained by individual vehicle operators using engine oils labeled Resource Conserving may differ because of many factors, including the type of vehicle and engine, engine manufacturing variables, the mechanical condition and maintenance of the engine, oil that has been previously used, operating conditions, and driving habits. ~~Before the October 1, 2010, introduction date, oil marketers may license oils meeting Resource Conserving in conjunction with API Service SN as Energy Conserving in conjunction with API Service SM.~~

Table 2—Resource Conserving Primary Performance Criteria with API Service Category SN

Performance Test	Performance Criteria	
	FEI SUM	FEI2 minimum after 100 hours aging
Sequence VID (ASTM D7589 ^a)		
Viscosity Grade		
XW-16	2.8%	1.3%
XW-20	2.6%	1.2%
XW-30	1.9%	0.9%
10W-30 and all other viscosity grades not listed above	1.5%	0.6%
Or		
Sequence VIE (ASTM D8114 ^a)		
Viscosity Grade		
XW-20	3.2%	1.5%
XW-30	2.5%	1.2%
10W-30 and all other viscosity grades not listed above	2.2%	1.0%
Or		
Sequence VIF (ASTM D8226 ^a)		
Viscosity Grade		
XW-16	3.7%	1.8%
Sequence IIIGB (ASTM D7320)	79% phosphorus retention min	
Or		
Sequence IIHIB (ASTM D8111)	81% phosphorus retention min	
Emulsion Retention (ASTM D7563)	No water separation	
High Temperature Deposits, TEOST 33C (ASTM D6335), Total Deposit Weight, mg		
SAE XW-16, 0W-20	Not Required	
All other viscosity grades	30 max	

^aViscosity grades are limited to 0W, 5W and 10W multigrade oils.

^bResource Conserving does not apply to 5W-16.

5.3.2.6.4 SN PLUS Classification in Conjunction with API Service Category SN and API SN with Resource Conserving

API Service Category SN engine oils that also carry the classification SN PLUS are formulated to provide API SN performance and additional protection against low-speed pre-ignition for turbocharged direct injection gasoline-powered vehicles.

Oils that meet the requirements for API SN with SN PLUS or API SN with SN PLUS and Resource Conserving at the limit shown in Annex G, Table G-4, and are properly licensed may display “SN PLUS” or “Resource Conserving SN PLUS” in the lower portion of the API Service Symbol in conjunction with API SN in the upper portion (see Figures 3 and 4).

Oils that satisfy SN PLUS can also effectively lubricate engines calling for API SN, API SN with Resource Conserving, or ILSAC GF-5. API SN with SN PLUS and API SN with SN PLUS and Resource Conserving are also backward compatible to API Service Categories before API SN.



Figure 3—API SN with SN PLUS



Figure 4—API SN with SN PLUS and Resource Conserving

5.3.2.5.3 Energy Conserving in Conjunction with API Service Category SM

API Service SM engine oils designated as Energy Conserving are formulated to improve the fuel economy of passenger cars, sport utility vehicles, vans, and light duty trucks powered by gasoline engines. These oils have produced a fuel economy improvement (FEI) both at the start and end of the Sequence VIB test at the percentages listed in Table 2, when compared with the standard reference oil (ASTM Reference Oil BC) used in the Sequence VIB test.

Oils that meet the Sequence VIB requirement and are properly licensed may display “Energy Conserving” in the lower portion of the API Service Symbol in conjunction with API Service Category SM in the upper portion. The fuel economy obtained by individual vehicle operators using engine oils labeled Energy Conserving may differ because of many factors, including the type of vehicle and engine, engine manufacturing variables, the mechanical condition and maintenance of the engine, oil that has been previously used, operating conditions, and driving habits.

Table 2—Sequence VIB Primary Performance Criteria with API Service Category SM

Viscosity Grade	FEI1 relative to BC, min	FEI2 relative to BC, min
0W-20 and 5W-20	2.3%	2.0%
0W-30 and 5W-30	1.8%	1.5%
10W-30 and all other viscosity grades not listed above	1.1%	0.8%

5.3.2.5.4 Energy Conserving in Conjunction with API Service Category SL

API Service Category SL engine oils categorized as Energy Conserving are formulated to improve the fuel economy of passenger cars, sport utility vehicles, vans, and light duty trucks powered by gasoline engines. These oils have produced a fuel economy improvement (FEI) both at the start and end of the Sequence VIB test at the percentages listed in Table 3, when compared with the standard reference oil (ASTM Reference Oil BC) used in the Sequence VIB test.

Oils that meet the Sequence VIB requirement and are properly licensed may display “Energy Conserving” in the lower portion of the API Service Symbol in conjunction with API Service Category SL in the upper portion. The fuel economy obtained by individual vehicle operators using engine oils labeled Energy Conserving may differ because of many factors, including the type of vehicle and engine, engine manufacturing variables, the mechanical condition and maintenance of the engine, oil that has been previously used, operating conditions, and driving habits.

Table 3—Sequence VIB Primary Performance Criteria with API Service Category SL

Viscosity Grade	FEI1 relative to BC, min	FEI2 relative to BC, min	Sum of FEI1 + FEI2, min
0W-20 and 5W-20	2.0%	1.7%	—
0W-30 and 5W-30	1.6%	1.3%	3.0%
10W-30 and all other viscosity grades not listed above	0.9%	0.6%	1.6%

5.3.2.5.5 Energy Conserving in Conjunction with API Service Category SJ and SH

Energy Conserving claims are not permitted with API Service Categories SJ and SH.

5.3.3 Service Categories for Diesel Engine Oils

5.3.3.1 CK-4—For 2017 Heavy-Duty Diesel Engine Service

API Service Category CK-4 describes oils for use in high-speed four-stroke cycle diesel engines designed to meet 2017 model year on-highway and Tier 4 non-road exhaust emission standards as well as for previous model year diesel engines. These oils are formulated for use in all applications with diesel fuels ranging in sulfur content up to 500 ppm (0.05% by weight). However, the use of these oils with greater than 15 ppm (0.0015% by weight) sulfur fuel may impact exhaust aftertreatment system durability and/or oil drain interval.

These oils are especially effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used. API CK-4 oils are designed to provide enhanced protection against oil oxidation, viscosity loss due to shear, and oil aeration as well as protection against catalyst poisoning, particulate filter blocking, engine wear, piston deposits, degradation of low- and high-temperature properties, and soot-related viscosity increase.

Engine oils that meet the API Service Category CK-4 designation have been tested in accordance with the ACC Code of Practice and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Read Across.

API CK-4 oils exceed the performance criteria of API CJ-4, CI-4 with CI-4 PLUS, CI-4, and CH-4 and can effectively lubricate engines calling for those API Service Categories. When using CK-4 oil with higher than 15 ppm sulfur fuel, consult the engine manufacturer for service interval recommendations.

Marketers may license products meeting API CK-4 requirements as API CJ-4, CI-4 with CI-4 PLUS, CI-4, and CH-4.

5.3.3.2 FA-4—For 2017 Heavy-Duty Diesel Engine Service

API Service Category FA-4 describes certain XW-30 oils specifically formulated for use in select high-speed four-stroke cycle diesel engines designed to meet 2017 model year on-highway greenhouse gas (GHG) emission standards. These oils are formulated for use in on-highway applications with diesel fuel sulfur content up to 15 ppm (0.0015% by weight). Refer to individual engine manufacturer recommendations regarding compatibility with API FA-4 oils.

These oils are blended to a high temperature high shear (HTHS) viscosity range of 2.9cP to 3.2cP to assist in reducing GHG emissions. These oils are especially effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used. API FA-4 oils are designed to provide enhanced protection against oil oxidation, viscosity loss due to shear, and oil aeration as well as protection against catalyst poisoning, particulate filter blocking, engine wear, piston deposits, degradation of low- and high-temperature properties, and soot-related viscosity increase.

Engine oils that meet the API Service Category FA-4 designation have been tested in accordance with the ACC Code of Practice and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Read Across.

API FA-4 oils are not interchangeable or backward compatible with API CK-4, CJ-4, CI-4 with CI-4 PLUS, CI-4, and CH-4 oils. Refer to engine manufacturer recommendations to determine if API FA-4 oils are suitable for use. API FA-4 oils are not recommended for use with fuels having greater than 15 ppm sulfur. For fuels with sulfur contents greater the 15 ppm, refer to engine manufacturer recommendations.

5.3.3.3 CJ-4—For 2010 Severe-Duty Diesel Engine Service

API Service Category CJ-4 describes oils for use in high-speed four-stroke cycle diesel engines designed to meet 2010 model year on-highway and Tier 4 nonroad exhaust emission standards as well as for previous model year diesel engines. These oils are formulated for use in all applications with diesel fuels ranging in sulfur content up to 500 ppm (0.05% by weight). However, the use of these oils with greater than 15 ppm (0.0015% by weight) sulfur fuel may impact exhaust aftertreatment system durability and/or oil drain interval.

These oils are especially effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used. Optimum protection is provided for control of catalyst poisoning, particulate filter blocking, engine wear, piston deposits, low- and high-temperature stability, soot handling properties, oxidative thickening, foaming, and viscosity loss due to shear.

Engine oils that meet the API Service Category CJ-4 designation have been tested in accordance with the ACC Code of Practice and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Read Across.

API CJ-4 oils exceed the performance criteria of API CI-4 with CI-4 PLUS, CI-4, and CH-4 and can effectively lubricate engines calling for those API Service Categories. When using CJ-4 oil with higher than 15 ppm sulfur fuel, consult the engine manufacturer for service interval recommendations.

Marketers may license products meeting API CJ-4 requirements as API CI-4 with CI-4 PLUS, CI-4, and CH-4.

5.3.3.4 CI-4—For 2004 Severe-Duty Diesel Engine Service

API Service Category CI-4 describes oils for use in high-speed four-stroke cycle diesel engines designed to meet 2004 exhaust emission standards implemented in 2002. These oils are intended for use in all applications with diesel fuels ranging in sulfur content up to 0.5% weight.

These oils are specifically formulated to sustain engine durability where Exhaust Gas Recirculation (EGR) is used and the impact of these oils on other supplemental exhaust emission devices has not been determined. Optimum protection is provided against corrosive and soot-related wear tendencies, piston deposits, degradation of low- and high-temperature viscometric properties due to soot accumulation, oxidative thickening, loss of oil consumption control, foaming, degradation of seal materials, and viscosity loss due to shear.

Engine oils that meet the API Service Category CI-4 designation have been tested in accordance with the ACC Code of Practice and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Read Across.

API CI-4 oils are superior in performance to those meeting API CH-4 and may be used in engines calling for that API Service Category. Marketers may license products meeting API CI-4 requirements as API CH-4.

5.3.3.5 CH-4—For 1998 Severe-Duty Diesel Engine Service

API Service Category CH-4 describes oils for use in high-speed four-stroke cycle diesel engines designed to meet 1998 exhaust emissions standards as well as for previous model years. CH-4 oils are specifically compounded for use with diesel fuels ranging in sulfur content up to 0.5% weight.

These oils are especially effective to sustain engine durability even under adverse applications that may stress wear control, high-temperature stability, and soot handling properties. In addition, optimum protection is provided against non-ferrous corrosion, oxidative and insoluble thickening, foaming, and viscosity loss due to shear.

These oils also have the performance capability to afford a more flexible approach to oil drain intervals in accordance with the recommendations of the individual engine builders for their specific engines.

Engine oils that meet the API Service Category CH-4 designation have been tested in accordance with the ACC Code of Practice and may use the API Base Oil Interchangeability Guidelines and the API Guidelines for SAE Viscosity-Grade Read Across (see Annexes E and F).

CH-4 oils are superior in performance to those meeting API CF-4 and API CG-4 and can effectively lubricate engines calling for those API Service Categories.

5.3.4 CI-4 PLUS Classification in Conjunction with API Service Category CI-4, CJ-4, and CK-4

API Service Category CI-4, CJ-4, and CK-4 engine oils that also carry the classification CI-4 PLUS are formulated to provide a higher level of protection against soot-related viscosity increase and viscosity loss due to shear in vehicles powered by diesel engines.

Oils that meet the requirements for CI-4 PLUS as defined in Annex S and are properly licensed may display "CI-4 PLUS" in the lower portion of the API Service Symbol in conjunction with API CI-4, CJ-4, and/or CK-4 in the upper portion (see Figure 5).

Oils that satisfy CI-4 PLUS are superior in performance to those meeting API CI-4 and CH-4 and can effectively lubricate engines calling for those API Service Categories.

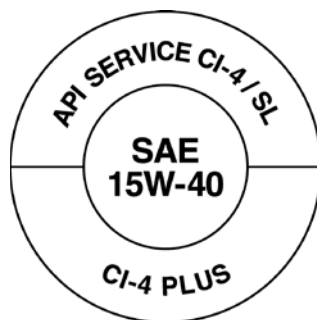


Figure 5—CI-4 PLUS Classification

5.4 SAE Viscosity Grades Eligible for Use with API Marks

The SAE viscosity grades eligible for use with the API Marks are specified in Table 3. Refer to SAE J300 for the most current SAE Viscosity Classification requirements.

Table 3—SAE Viscosity Grades Eligible for Use with API Marks

Low-Temperature Viscosity Grade	High-Temperature Viscosity Grade						
	—	16	20	30	40	50	60
—		Y	Y	Y	Y	Y	Y
0W	Y	Y	XY	XY	XY	XY	XY
5W	Y	Y	XY	XY	XY	XY	XY
10W	Y	Y	XY	XY	XY	XY	XY
15W	Y	Y	Y	Y	Y	Y	Y
20W	Y	Y	Y	Y	Y	Y	Y
25W	Y	NA	NA	Y	Y	Y	Y

Note: X = eligible for the API Certification Mark, provided the oil meets all license requirements outlined in this publication for the API Certification Mark; Y = eligible for the API Service Symbol, provided the oil meets all license requirements outlined in this publication for the API Service Symbol; NA = not applicable.

6 License System for API Marks

6.1 General

6.1.1 The API EOLCS is a voluntary licensing and certification program designed to define, certify, and monitor engine oil performance deemed necessary for satisfactory equipment life and performance by vehicle and engine manufacturers. Its purpose is to ensure that engine oils meeting the minimum performance standards of vehicle and engine manufacturers are easily identified by consumers.

6.1.2 To use either of the two API Marks, an engine oil marketer must apply for and obtain a license from API. The application steps the marketer must complete and the information the marketer must submit to API to secure the right to use the API Marks are provided in the EOLCS Online Application at <http://engineoil.api.org> (see Annex H). A marketer desiring to apply for a license must complete the Online Application. Licenses are valid from the date of license approval until March 31 of the next year as long as all program requirements continue to be met. Annual renewals are issued when all renewal steps are completed.

6.2 Licensing Fees

6.2.1 Licensees pay API licensing fees to support EOLCS. These fees are reviewed annually. The current fee structure is available on-line at <https://www.api.org/products-and-services/engine-oil/application-and-fees>.

6.2.2 Applicants pay a nonrefundable fee at time of application. The application fee is per license, not per product licensed. The application fee is the same if the applicant applies to license one engine oil or many.

6.2.2.1 Current licensees pay an annual minimum licensing fee and an additional annual licensing fee for each gallon of packaged and bulk API-licensed oil sold after the first million gallons.

6.2.2.2 Applicants are only assessed the application fee in their initial year of licensing. The additional fee based on a licensee's volume of API-licensed oil sold is charged to the licensee at time of license renewal. To renew an API license, the licensee must report the volume of all API-licensed oils (packaged and bulk) sold in the prior year. Volume-of-sales figures will be held in strict confidence by API.

6.3 Responsibility of Marketers

6.3.1 Only an engine oil marketer may apply for and be awarded a license to display an API Mark. [See the glossary (Annex I) for a definition of marketer.]

6.3.2 As noted in the licensing agreement, the marketer is solely responsible for ensuring that the performance characteristics of the oil product displaying an API Mark or Marks meet all requirements for the Mark or Marks. If multiple Service Categories are used, the marketer must ensure that the oil meets the minimum performance requirements for each of the Service Categories designated. If, in obtaining a license for use of an API Mark, a marketer chooses to use either the API Base Oil Interchangeability Guidelines or API Guidelines for SAE Viscosity-Grade Read Across, that marketer is also responsible for correctly applying those guidelines. The most recent version of the guidelines can be obtained on-line at <https://www.api.org/products-and-services/engine-oil/documents>.

6.4 Licensing Procedures

6.4.1 A valid API license permits the marketer to use the API Marks on its licensed oils and is that marketer's warranty that its licensed oils comply with licensing requirements. The EOLCS Online Application requires applicants to certify that licensed oils meet EOLCS requirements and to abide by all the requirements of the program and the licensing agreement.

6.4.2 The EOLCS Online Application specifies the certified information applicants must submit to demonstrate that their oil or oils meet specific Service Categories or the current ILSAC specification and are eligible for one or both of the API Marks. The information required is also addressed in Annex H. This includes certification by the marketer that each brand and viscosity grade of the engine oil for which licensing is requested meets the most recent version of prescribed technical criteria as set forth in the following standards:

- a. ASTM D4485.
- b. SAE J300.
- c. SAE J183 ~~for oils not designated Energy Conserving.~~

The EOLCS Online Application may include additions, deletions, or other modifications to the standards listed above.

6.4.3 The EOLCS Online Application includes but is not limited to the following certification statements:

- a. Any engine tests covered by the ACC Code of Practice and in the API licensing program must be conducted in accordance with the latest edition of the ACC Code of Practice (see Annex J).
- b. Any Base Oil Interchangeability or Viscosity-Grade Read Across Guidelines must be applied in accordance with Annexes E and F.

The EOLCS Online Application clearly states that the use of API Base Oil Interchangeability Guidelines and API Guidelines for SAE Viscosity-Grade Read Across does not absolve the marketer of the responsibility to meet minimum performance standards for the licensed oils.

6.4.4 The applicant is required to submit the following information (based on the final engine oil formulation) for each product to be considered for licensing (note that a difference in viscosity grade, Service Category, or brand name denotes a separate engine oil):

- a. Elemental analysis data.
- b. Finished oil physical properties.
- c. Additive and base oil information.
- d. Engine test information (stand code from applicable category engine test, base oil interchange/viscosity grade read across use).
- e. Product traceability code information.

The EOLCS Online Application specifies that all licensed oils are subject to monitoring and enforcement procedures, including audits.

6.4.5 After the marketer has completed the application process, paid the fee, and been granted the license, the marketer may display the API Marks on licensed products in accordance with Section 7.

6.4.6 API maintains strict confidentiality of all proprietary data provided by license applicants. Information submitted is used only as specified in the license agreement.

6.5 Renewals

A license may be renewed annually by mutual agreement of the parties, provided the licensee reports the volume of licensed product sold the previous year, pays the annual fee, and agrees to comply with any amendments to the license agreement and any modifications or additional specifications of the license requirements.

6.6 System Monitoring and Enforcement

The integrity of the API EOLCS is maintained by means of a formal monitoring and enforcement program, as defined in Section 8.

6.7 Provisional License

6.7.1 On rare occasions, a test or tests specified under API licensing requirements for API S, C, or F Service Categories or ILSAC minimum performance standards may be declared by ASTM Subcommittee D02.B0 to be “out of control” or “unavailable” or determined by API to be “unavailable.” Reasons for these declarations or determinations may be due to various factors such as a severity shift in the test results, shortage of test materials, an industry-wide test-related emergency, lack of test availability at independent test labs, or another situation that prevents tests from being run. ASTM D02.B0 may declare a test “out of control” when the test’s surveillance panel and classification panel have judged the test to be giving uninterpretable performance. ASTM D02.B0 and its panels may also declare a test to be “unavailable” in accordance with ASTM Subcommittee B Test Availability Guidelines. In a case where ASTM determines that a test is “available” and API determines that the same test is “unavailable,” API’s determination will stand with regard to enacting provisional licensing. API may make its own determination that a test is “unavailable” for reasons noted above and particularly in situations where independent test labs can no longer run a test or tests. When a test or tests are declared “out of control” or determined to be “unavailable,” API may grant a provisional license or licenses to an applicant if the candidate engine oil meets all API licensing requirements except for the test or tests that are “out of control” or “unavailable.”

6.7.2 When a test or tests are “out of control” or “unavailable,” API will evaluate the impact of their loss on the Engine Oil Licensing and Certification System. The evaluation will include the following:

- a. Test performance measurement or parameter affected.
- b. Reason the test or tests are “out of control” or “unavailable.”
- c. Proposed issue resolution and the time necessary to implement the resolution.
- d. Test recertification plan.
- e. Any alternative test/data options available to provide indication of suitable performance.

API will perform its evaluation and report the results of its evaluation to the Lubricants Standards Group. The result of the API evaluation will be reported to Lubricants Standards Group with recommendations on Provisional Licensing.

6.7.3 When a test or tests are expected to be “out of control” or “unavailable” for an undetermined, indefinite period of time, API will consider alternative tests and seek advice from the AGP, Lubricants Standards Group members, lab personnel, and others who have experience with category test replacement. If API recommends and the Lubricants Standards Group agrees, a task force will be formed, and API will follow the steps included in 6.8.

6.7.4 Where a test or tests are approaching end of life (on the basis of parts availability), API may institute active monitoring of test availability if the queued requests received at independent labs significantly exceed those labs’ capacity of tests. This monitoring may lead to API declaring the test “unavailable.”

6.7.5 API will notify all API licensees, the Lubricants Standards Group, the Alliance, EMA, JAMA, and ACC of the date on which any test required for an API license is declared “out of control” or “unavailable” and the date on which the test is declared “no longer out of control” or “no longer unavailable”.

6.7.6 All applications for a provisional API license shall include data that support the performance of the candidate engine oil in the test or tests not conducted. Ideally, these data shall conform to Level 2 Support, as described in Tab 1 of the ACC Code. In the absence of Level 2 Support data, the licensee shall submit technical information that demonstrates that the candidate engine oil would likely pass the “out of control” or “unavailable” test or tests.

6.7.7 A request for provisional licensing of an oil is made by checking the provisional licensing box in the EOLCS Online Application. This box should only be checked if a product or formulation does not have a passing result in the test or tests declared “out of control” or “unavailable” at the time of application. The box must not be checked if an applicant is waiting for test results on available tests.

6.7.8 When the API Base Oil Interchangeability Guidelines are used to “interchange” a base oil in a new formulation or the Guidelines for SAE Viscosity-Grade Engine Testing are used to “read across” from a provisionally licensed engine oil, the licensee must indicate provisional status on the EOLCS Online Application for that engine oil.

6.7.9 After a test is “no longer out of control or unavailable” and API has forwarded this information to each licensee holding a provisional license, the licensee holding the provisional license must obtain a passing result on that test. At minimum, the licensee will be given 6 months to obtain a passing result, but more time may be granted if test length or other factors warrant a longer testing period.

6.7.9.1 Upon passing the test, the licensee will request full licensing of the oil by submitting a revised formulation for the provisionally licensed oil and withdrawing the provisionally licensed formulation. The EOLCS Online Application System requires a brand to have at least one valid formulation to remain a licensed brand. This would also apply to any provisionally licensed “interchange” or “read across” oils arising from 6.7.8.

6.7.9.2 If a revised formulation for the provisionally licensed oil is not received by API within the allotted timeframe included in the “no longer out of control or unavailable” notification to licensees, API will withdraw the provisionally licensed oil and notify the licensee that the API S, C, or F Service Category in the API Service Symbol and/or the API Certification Mark shall no longer be displayed on the label of that engine oil or any engine oil that was provisionally licensed based on that engine oil (per 6.7.8).

6.7.10 Engine oils granted an API provisional license will be listed in API’s Directory of Licensees on API’s website in the same manner as API-licensed oils, without any special designation. The licensee is still responsible for the satisfactory performance of all engine oils granted an API provisional license, per the provisions of Section 4.

6.8 Formation of Task Force to Establish Alternatives or Replacement Tests for Out of Control or Unavailable Tests

6.8.1 When API and the Lubricants Standards Group agree that a task force should be formed to establish alternative tests addressing the loss of a test or tests declared “out of control” or “unavailable,” the task force shall be formed as indicated below:

- a. For tests necessary to validate an oil’s eligibility for a license to display the API Certification Mark or an API S Service Category in the API Service Symbol, a task force shall be formed from API and automotive representatives from API’s Administrative Guidance Panel (AGP).
- b. For tests necessary to validate an oil’s eligibility for a license to display a current API C or F Service Category in the API Service Symbol, a task force shall be formed from API and EMA.
- c. For tests necessary to validate an oil’s eligibility for a license to display simultaneously the API Certification Mark or current API S, C, or F Service Categories in the API Service Symbol, a task force shall be formed from API, AGP automotive representatives, and EMA.

Each of the above-mentioned groups (API, AGP, and EMA) shall select three members to participate on the task force. The task force may also invite other industry representatives as advisory, non-voting members to ensure the right level of technical expertise is available to understand the potential impact of allowing provisional licensing. In all cases, API staff shall act as facilitators for the task force or task forces.

6.8.2 The task force shall complete a comprehensive review that may include the following:

- a. Evaluating reasons for the “out of control” or “unavailable” declaration.
- b. Conducting a risk assessment and drawing conclusions.
- c. Recommending a course of action.
- d. Recommending when to cease provisional licensing.

6.8.3 The appropriate specification-development bodies (AOAP for S Service Categories and DEOAP for C and F Service Categories) are responsible for evaluating and approving plans intended to resolve “out of control” or “unavailable” declarations related to S, C, or F Service Categories under their purview.

6.8.4 The task force or task forces will make best efforts to supplement the activities of any one test’s Surveillance Panel by providing new options and occasionally supporting resolution efforts through funding and/or providing in-kind contributions (for example, test parts, test materials, and oils).

6.9 Emergency Provisional Licensing

6.9.1 If a supply of base oil or additives utilized by a number of licensees is disrupted, licensees may apply for short-term Emergency Provisional Licenses. A disruption is defined as a significant industry-wide limitation on the supply of a base oil or additive that makes it impossible for multiple licensees to market sufficient quantities of engine oil without violating the API licensing agreement. The disruption must be caused by an unforeseeable event involving, but not limited to, an explosion, fire, legal action, natural disaster, or act of terrorism that is beyond the control of individual licensees.

6.9.2 The licensee's application for an Emergency Provisional License must include a detailed description of the event that created the need for the Emergency Provisional License; the steps that have been taken by the licensee to find other sources of licensable materials, including both raw materials and finished products; an estimate of the duration of the shortage; and other supporting information required by API. The licensee must also submit technical information that supports, to the satisfaction of API, that the use of the substitute component will not adversely affect the claimed performance standards of the licensed product.

6.9.3 The initial term of the Emergency Provisional License will be granted for up to 90 days. At the discretion of API, this license period may be extended beyond the 90-day term. The Emergency Provisional License is intended to last only until the licensee obtains alternative supplies of materials, completes additional requirements as defined by API, or the disruption ends, whichever is earlier. The Emergency Provisional License will be conditioned upon the licensee fully complying with requirements and other conditions imposed by API to protect consumers and the integrity of the program.

6.9.4 Relief under this section will rarely be granted by API. The burden is on the licensee to establish clearly that there are exigent circumstances that justify the use of this type of remedy and that the failure of the licensee to obtain supplies of base oil, additives, or finished products was not caused by the licensee's negligence or failure to utilize good business practices.

7 Use and Labeling Requirements for API Marks

7.1 API Engine Oil Quality Marks

7.1.1 API licenses three types of engine oil quality marks: the API Certification Mark "Starburst" (see Figure 6), **the API Certification Mark "Shield" beginning on May 1, 2020 (Figure 7), and** the API Service Symbol "Donut" (see Figures 8 and 9). The marketer may display an API Mark, as described in this section, only after obtaining a license to use the specific API Mark. Under the terms of the License Agreement, marketers may use the Marks in a number of ways: for example, on containers of licensed products [bottles, cans, jugs, kegs, drums, intermediate bulk containers (IBC), tanks, etc.]; in advertisements of licensed products; and in materials describing licensed products.

7.1.2 API will provide licensed marketers with "camera-ready" quality images or electronic versions (TIF, EPS, JPG, and BMP) of the API Marks, on request, for use in producing final artwork.

7.1.3 The API Certification Mark "Starburst" and API Certification Mark "Shield" may be used with the API Service Symbol "Donut" if the marketer meets all licensing requirements for the API Marks for that viscosity grade of engine oil. Note that a difference in viscosity grade, Service Category, or brand name denotes a separate engine oil. The API Marks shall be located and displayed as described in 7.2 through 7.4.

7.2 API Certification Mark "Starburst"

7.2.1 If the API Certification Mark "Starburst" is used, it shall be clearly displayed on the front of the container of those engine oils that have been properly licensed by API. Note that this does not prevent the licensed marketer from displaying the API Certification Mark again on the back of the container.

7.2.2 The outside diameter of the API Certification Mark "Starburst" (measured from the outside tips) shall be at least 2.1 centimeters and shall be 1.5 (± 0.1) times the inside diameter. The background of the outer band (containing the words AMERICAN PETROLEUM INSTITUTE and CERTIFIED) shall be a color that contrasts with the label background. (For example, if the label background is white, the outside band could be black with the words in white.)



Figure 6—API Certification Mark “Starburst”

The background of the inner circle shall be a color that contrasts with the outer band. The words AMERICAN PETROLEUM INSTITUTE and CERTIFIED in the outer band of the API Certification Mark and the words FOR GASOLINE ENGINES in the center shall be all capital letters. The relationship of the letter size to the allocated space within the API Certification Mark must be consistent for all users of the API Certification Mark. All lettering used for words in the API Certification Mark must be identical for all licensees.

7.2.3 API has registered the API Certification Mark only in the English language, and it can be displayed only as registered and shown in Figure 6. However, the purpose of the API Certification Mark is to assist consumers, so API encourages licensed marketers to translate the words CERTIFIED and FOR GASOLINE ENGINES into any appropriate language outside of the API Certification Mark. The translation must be literal and provided to API as part of the licensing agreement. The location of the translations can be anywhere on the front of the label but not within a mark or symbol of any kind. AMERICAN PETROLEUM INSTITUTE is also a licensed mark and cannot be translated without permission of API.

7.3 API Certification Mark “Shield”

7.3.1 If the API Certification Mark “Shield” is used, it shall be clearly displayed on the front of the container of those engine oils that have been properly licensed by API. Note that this does not prevent the licensed marketer from displaying the API Certification Mark “Shield” again on the back of the container.

7.3.2 The length of the API Certification Mark “Shield” (measured from the top to the bottom of the shield) shall be at least 2.1 centimeters. The inner shield shape (containing the words AMERICAN PETROLEUM INSTITUTE and CERTIFIED FOR GASOLINE ENGINES) and the line denoting the outer shield shape shall be a matching color that contrasts with the label background. (For example, if the label background is a lighter color such as yellow, the inner and outer shields should be a darker color with the lettering inside the inner shield displayed in a lighter color such as the background yellow or white.)



Figure 7—API Certification Mark “Shield”

The words AMERICAN PETROLEUM INSTITUTE and CERTIFIED FOR GASOLINE ENGINES and the acronym SAE and letter “W” in the SAE viscosity shall be all capital letters. The relationship of the font size to the allocated space within the API Certification Mark “Shield” must be consistent with the design shown in Figure 7. A sans serif font must be used for all lettering.

7.3.3 API has registered the API Certification Mark “Shield” only in the English language, and it can be displayed only as registered and shown in Figure 7. However, the purpose of the API Certification Mark “Shield” is to assist consumers, so API encourages licensed marketers to translate the words CERTIFIED FOR GASOLINE ENGINES into any appropriate language outside of the API Certification Mark “Shield.” The location of the translation can be

anywhere on the front of the label but not within a mark or symbol of any kind. AMERICAN PETROLEUM INSTITUTE is also a licensed mark and cannot be translated without permission of API.

7.4 API Service Symbol “Donut”

7.4.1 The API Service Symbol “Donut” may be located anywhere on the outside of the container. The outside diameter of the API Service Symbol shall be 1.9 times the inside diameter. The Service Category must be placed in the upper part of the Donut, the SAE viscosity grade in the center, and the optional **Resource** Conserving, **CI-4 PLUS**, and **SN PLUS classifications** in the lower part. The API Service Symbol shall be large enough for the lettering to be legible and shall strictly conform to the design (including the required information and its placement) shown in Figure 8.

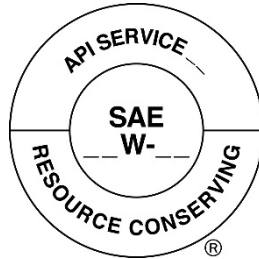


Figure 8—API Service Symbol “Donut”

7.4.2 Beginning December 1, 2016, when API Service FA-4 is claimed, the upper half of the Service Symbol must be divided by a single vertical line, and the API Service Categories and phrase “API Service” must appear as shown in Figure 9 (Service Categories left and “API Service” right of vertical line). Note that licensed FA-4 oils shall use a Service Symbol that conforms to the divided upper half designs in Figures 9 and 10.

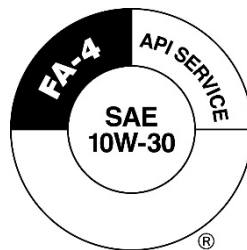


Figure 9—API Service Symbol “Donut” with API FA-4

7.4.3 API Service Symbols may appear as black and white, reversed out, or in color. Examples of acceptable designs are provided in Figures 9 and 10. Any color is acceptable provided the design conforms to the designs shown in Figures 8 through 10.



Figure 10—Representative Examples of the API Service Symbol with FA-4

7.4.4 Use of the API Service Symbol is restricted to current API Service Categories [namely, SN; SM; SL; SJ; ~~SH~~ (when used as described in 7.3.3), CH-4; CI-4; and CJ-4; CK-4, FA-4 and beginning May 1, 2020, SP]. Except as prohibited in 5.3.3, these may appear alone or in combination with other current Service Categories. The API Service Categories must appear in the upper part of the API Service Symbol, but such placement does not preclude their use

elsewhere on the container. Use of API Service Categories SA, SB, SC, SD, SE, SF, SG, **SH**, CA, CB, CC, CD, CD-II, CE, CF, CF-2, CF-4, and CG-4 within the API Service Symbol is prohibited (see Annex A).

7.4.5 Use of more than one API S Service Category in the API Service Symbol is prohibited. SAE 0W-16 and 5W-16 oils may only be licensed as API SN, **API SN with Resource Conserving**, **API SN with SN PLUS**, and **API SN with SN PLUS and Resource Conserving**. Beginning on May 1, 2020, SAE 0W-16 and 5W-16 oils may be licensed as **API SP**, **API SP with Resource Conserving**, **API SP with SN PLUS**, and **API SP with SN PLUS and Resource Conserving**. ~~Service Category SH cannot be used in the API Service Symbol unless preceded by CH-4 and/or CI-4 and/or CJ-4.~~

If API C Service Category oils are licensed for more than one current Service Category, these oils may display the Service Categories in the upper part of the API Service Symbol. Except as specified above, if the engine oil marketer chooses to include API C Service Categories with a current API S Category, a virgule (/) must be placed between the API S Service Category and the API C Service Categories, which are separated by commas. Licensees of Service Category C oils may use the C Categories first. Examples of acceptable notations are “API Service SN”; **“API Service CK-4”**; “API Service CJ-4,CI-4/SM”; “API Service SJ”; “API Service CJ-4/SM”; “API Service CI-4”; and “API Service CH-4.” Figure 11 shows examples of notations for various Service Categories used within the API Service Symbol.

For an oil that is formulated for diesel engine applications and meets both C and S Categories, ~~it is suggested that~~ the C Category **should** be put first so that the consumer can recognize that the oil is primarily a diesel engine oil but also meets S Category requirements. Conversely, for an oil that is formulated for passenger car motor oil applications and meets both S and C Categories, ~~it is suggested that~~ the S Category **should** be put first so that the consumer can recognize that the oil is primarily a passenger car motor oil but also meets C Category requirements. ***Some automobile manufacturers are concerned that engine oils with greater than 800 parts per million (0.08% mass) phosphorus can adversely affect catalytic converters in gasoline-fueled engines.***

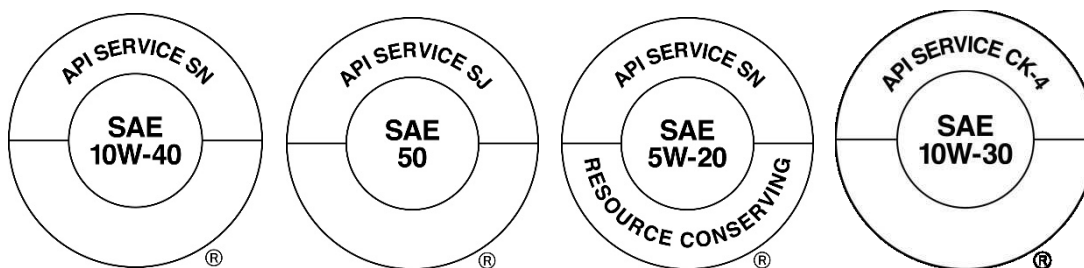


Figure 11—Representative Examples of the API Service Symbol

7.5 Product Traceability Coding

7.5.1 For purposes of conformance audits, the marketer shall ensure that product traceability codes appear on each container and that these codes are legible and durable. Each container shall be coded to permit traceability of samples in the marketplace by formulation, date of packaging, and source of manufacture.

7.5.2 The marketer may use whatever coding system is appropriate or convenient. Disclosure of coding systems to API is required in the EOLCS Online Application (see Annex H). No change in coding is permitted without prior notification of API. Coding information provided to API is considered confidential and will be used only as described in the API license agreement.

8 System Monitoring, Enforcement, and Conformance

8.1 General

8.1.1 API's Aftermarket Audit Program (AMAP) is a monitoring and enforcement program designed to ensure compliance by marketers (licensees) with the licensing requirements of the API EOLCS at the time of initial licensure as well as in the aftermarket. Monitoring and enforcement efforts are directed to confirm that, for each licensed product: (a) at licensure, the physical and chemical properties of the licensed formulation for such product, as described in the finished oil physical properties and elemental analysis sections of the EOLCS Online Application (the “Licensed Fingerprint”), have met the product qualifications claimed in the formulation information in the Online Application and paragraph 6.4.2; (b) each licensed product, as marketed, conforms to the Licensed Fingerprint for

that product; and (c) the API marks are properly displayed on licensed product containers and convey accurate information to consumers about the contents.

8.1.2 To ensure continued compliance with API licensing requirements, the Licensed Fingerprint of an engine oil will be used to determine whether the engine oil being marketed is in compliance with the data submitted in the EOLCS Online Application. API may review the information furnished by applicants in the EOLCS Online Application pursuant to paragraph 6.4.4. This will include, where applicable, API securing and reviewing with the applicant the underlying engine, bench, and analytical testing data from the licensee and program information to confirm that the applicable criteria set forth in API 1509 and in ASTM D4485 have been met.

- a. Where the applicable information includes engine and/or bench testing, API shall confirm that the licensee has passing test results for the licensed product, whether full or provisional, that establish that the licensed product met API's standards at initial licensure (or any amended licensure). API shall then determine continued compliance with API's standards for licensure by confirming that the licensed product, as marketed, conforms to the Licensed Fingerprint. As stated in 6.3.2, the marketer is solely responsible for ensuring that the performance characteristics of the oil product displaying an API Mark or Marks meet all requirements for the Mark or Marks.
- b. Where applicable read across guidelines are employed in lieu of engine testing, API shall confirm that the licensee has passing test results for the formulation tested, whether full or provisional, that establish that the licensed product met API's minimum performance standards for licensure at initial licensure (or any amended licensure). API shall then determine continued compliance with API's standards for licensure by confirming that the licensed product, as marketed, conforms to the Licensed Fingerprint and the guidelines have been properly interpreted and applied. In addition, to ensure proper interpretation and application of read across guidelines, prior to and after licensure API may require selected applicants to review in detail with API how such guidelines were interpreted and applied by the applicant. No such review with API shall absolve a marketer of the responsibility for correctly applying read across guidelines.

8.1.3 To ensure that licensed products, as marketed, conform to their respective Licensed Fingerprints, API will annually secure samples of brands and viscosity grades of randomly selected licensed products. Licensees shall be required to use reasonable efforts to ensure that such samples are made available to API. Each of the samples will be analyzed according to a standard audit (see Annex K) that compares the physical and chemical property audit data with the Licensed Fingerprint for the licensed product in question. Test results must meet the physical and chemical tolerances described in Annex K. API shall consider a sampled oil as in compliance with the API standards for licensure if the oil tested matches the Licensed Fingerprint (see 8.1.2). Of the oils found to meet the bench and analytical standards, some may be randomly chosen (see Annex L) for engine testing to determine compliance with engine test standards. Engine test results are evaluated using the methodology specified in Annex M. In cases of engine test failure, API shall confirm that the licensed product complies with paragraph 8.1.2. This includes a complete review of all engine, bench, and analytical testing results supporting the licensed product. If API is unable to confirm that the licensed product complies with paragraph 8.1.2, API shall notify the licensee and take appropriate action as provided in 8.2.1.

Where the applicable criteria allow the use of read across guidelines in lieu of specified bench and analytical testing, licensees may be required to run bench and analytical tests if the licensed product fails to conform to the Licensed Fingerprint for that product.

8.1.4 Engine oils will be chosen for engine test audits based on a randomly generated list of API licensees, weighted by volume (see Annex L).

8.1.5 API will contract with independent organizations to collect samples from the field and conduct all physical and chemical analyses, bench tests, and engine tests.

8.1.6 Data obtained through the Aftermarket Audit Program are considered confidential, are available only to the appropriate API staff and the licensee, and are used only for the purposes stated in the inquiry. Specific data derived from the Aftermarket Audit Program will not be used for any reason other than the monitoring process without written permission from the licensee. When summary data are issued by API, they will not be company specific.

8.2 Violations

8.2.1 General

Violations of the EOLCS are divided into two categories: (a) noncompliance with technical specifications and (b) improper use of the API Marks.

8.2.1.1 Noncompliance with Technical Specifications

If an API-licensed oil does not meet technical specifications, API will attempt to work directly with the marketer to evaluate the nonconformity and take additional corrective action as appropriate on a voluntary basis. If the matter cannot be satisfactorily resolved, API will take or initiate the actions listed below, singly or in combination, to maintain the credibility of the API Mark and protect the consumer. Enforcement action will be related to the severity of the alleged offense, the period of time that the violating product has been in the marketplace, the efforts made by the marketer to correct the violation, and the possible harmful impact on the consumer. These actions include the following:

- a. Temporary suspension of the authority of the licensee to use the API Mark on a product until corrective action has been taken.
- b. Termination of the authority of the licensee to use the API Mark on an individual product.
- c. Termination of the authority of the licensee to use the API Mark on all API-licensed products marketed by the licensee.
- d. Requirement for the licensee to remove noncomplying products that display API Marks from the marketplace.

Note: All monitoring and enforcement actions must be resolved to API's satisfaction before an existing license will be renewed or a new license issued.

8.2.1.2 Improper Use of API Marks

If licensed or unlicensed oils display an improper label or unauthorized labeling data, API will require the marketer to cease and desist from committing the violation and will request verification that the violation has been corrected.

8.2.2 Verification of Compliance with API Enforcement Action

API will take steps to verify that required corrective action has been executed. Actions requested to verify compliance will depend on the seriousness of the violation. The cost of these verification procedures will be borne by the marketer, as specified in the license agreement. Verification procedures include the following:

- a. Submission of copies of labels. The marketer will be required to provide a copy of all labels reflecting the correction of the API Mark violation.
- b. Attestations. The marketer will be required to furnish an affidavit from a third party (a law firm or an accounting firm) that the specified remedial action has been completed.
- c. Retesting. The marketer will agree to undertake any agreed-upon retesting.
- d. Other evidence of compliance. API can make other reasonable requests to verify compliance.

8.2.3 Appeals

When API suspends or revokes a license, the former licensee may appeal the decision. Appeals must be submitted in writing to the Director, Global Industry Services. The appeal shall include a statement of the basis for the objection. The appeal must be filed with API within 45 days of the date of notification of the suspension or revocation of the license. The API Director shall investigate the objections raised and respond to them in writing within 45 days of receipt. If the objections cannot be resolved by the Director, a hearing by a designated appeals board shall be convened in accordance with API Policy 602.

Annex A

Evolution of Engine Oil Classifications

In 1911, SAE developed a system that classified engine oils by viscosity. This engine oil classification system remained in place until 1947, when API designated three types of engine oils: regular, premium, and heavy duty. Generally, the regular oils were straight mineral oils, the premium oils contained oxidation inhibitors, and the heavy-duty oils contained both oxidation inhibitors and detergent-dispersant additives.

Recognizing the inadequacy of this designation system, in 1952 API's Lubricants Committee, in cooperation with ASTM, developed the Engine Service Classification System (ESCS). API and ASTM revised ESCS in 1955 and again in 1960. ESCS separated gasoline and diesel engine performance with Service Categories ML, MM, and MS and DG, DM, and DS, respectively.

In 1969 and 1970, API, ASTM, and SAE established an entirely new classification system that would satisfy the changing warranty, maintenance, and lubrication requirements of the automotive industry. SAE initially determined that there were eight separate Service Categories of passenger car engine oils of current substantial commercial interest to be considered. ASTM established the test methods and performance characteristics and technically described each of the Service Categories. API prepared a user language, including new letter designations for each of the eight Service Categories. These eight engine Service Categories were tied to the ASTM technical description and primary performance criteria. SAE then published results of the entire project and the methodology as SAE J183.

Over the years, API, ASTM, and SAE have established new Service Categories and declared old Service Categories technically obsolete: The three organizations declared Gasoline Engine Service Category SA technically obsolete; Service Categories SB, SC, SD, SE, SF, and SG became technically obsolete when test methods were no longer available to verify performance; and Diesel Engine Service Categories CA, CB, CC, CD, CD-II, CE, CF, CF-2, CF-4, and CG-4 also became technically obsolete when test methods were no longer available to verify performance or the API Lubricants Committee voted by letter ballot to make a category or categories obsolete. Table A-1 lists all technically obsolete Service Categories.

In 1992 and 1993, API, ASTM, and U.S. and Japanese automotive manufacturers introduced improvements in the licensing process for engine oils to ensure the quality of products being marketed and to enhance consumer awareness of the recommended lubricants for new vehicles. This improved process is known today as the API Engine Oil Licensing and Certification System (EOLCS).

Table A-1—Summary of Obsolete Service Categories and Related Military and Industrial Designations

Technically Obsolete API Service Categories	Previous API Service Categories	Related Military and Industrial Designations
Automotive Gasoline Engines (Passenger Car Engine Oils)		
SA	ML	Straight mineral oil
SB	MM	Inhibited oil, minimum duty
SC	MS (1964)	1964 MS warranty approved, M2C101-A
SD	MS (1968)	1968 MS warranty approved, M2C101-B, 6041-M (before July 1970)
SE	None	1972 warranty approved, M2C101-C, 6136-M (previously 6041-M Rev.), MIL-L-46152A
SF	None	1980 warranty approved, M2C153-D, MIL-L-46152B/C, 6048-M, 6049-M
SG	None	1989 warranty approved, MIL-L-46152D/E
SH	None	None
Commercial Diesel Engines (Diesel Engine Oils)		
CA	DG	MIL-L-2104A
CB	DM	Supplement 1
CC	DM	MIL-L-2104B, MIL-L-46152B
CD	DS	MIL-L-45199B, Series 3, MIL-L-2104C/D/E
CD-II	None	MIL-L-2104D/E
CE	None	None
CF	None	None
CF-2	None	None
CF-4	None	None
CG-4	None	None

Annex B

Interindustry Advisory Group to API/Automotive Manufacturers Administrative Guidance Panel on API EOLCS

B.1 Scope

The Interindustry Advisory Group (IAG) will provide recommendations to the API/Automotive Manufacturers Administrative Guidance Panel (AGP) on proposed modifications to the API EOLCS.

B.2 Function

The group will review, evaluate, and make recommendations on EOLCS matters, including tolerance limits, the Aftermarket Audit Program, the ACC Code of Practice, and any other issues relevant to the licensing program.

B.3 Organization

Each of the following organizations will be invited to provide one representative to the group: ACC, API, ASTM, Automotive Manufacturers, Truck and Engine Manufacturers Association (EMA), Independent Lubricant Manufacturers Association (ILMA), Japan Automobile Manufacturers Association (JAMA), Petroleum Association of Japan (PAJ), SAE, and the U.S. Army. Representatives from other organizations may be added to the group as deemed necessary by the AGP. A group member serves at the discretion of the sponsoring organization and is charged with addressing improvements and concerns from his or her organization's perspective. Therefore, there will be no fixed term of membership for the group members.

B.4 Officers

The chair of the IAG is the API representative. The chair calls the meetings, sets the agenda, and presides.

The vice chair of the IAG is rotated annually between an Automotive Manufacturer and an EMA representative. The vice chair assists the chair and presides when the chair is absent.

The secretary of the IAG is the API EOLCS Manager. The secretary assists the chair, arranges meetings, drafts minutes, and handles the group's correspondence.

B.5 Meetings

The intent is to meet at the call of the chair, not to exceed two meetings per year. Where possible, group meetings will be held in conjunction with other scheduled meetings that are widely attended by industry. Meetings will be held in accordance with API policy.

B.6 Decision Making

The chair will attempt to achieve group consensus on issues before a formal vote. Lacking consensus, standard voting procedures will be followed, with a simple majority of voting members present at the meeting required to carry any motion. Each organization will have a single ballot in each formal vote. The chair will allow dissenting voters to present their views when forwarding the outcome of votes.

Annex C

Developing New Engine Oil Performance Standards for API Certification Mark

C.1 General

One of the objectives of API's voluntary Engine Oil Licensing and Certification System (EOLCS) is to help consumers identify engine oils recommended by vehicle and engine manufacturers. To accomplish this objective, the International Lubricant Specification Advisory Committee (formerly International Lubricant Standardization and Approval Committee) (ILSAC) and API created in 1993 the API Certification Mark. The API Certification Mark, or "Starburst" for short, is a Registered Mark that clearly identifies passenger car engine oils meeting the latest engine oil performance standard adopted by ILSAC and API.

This annex outlines the primary process used to set specifications for certain passenger car engine oils and describes the procedures that API will use to determine whether these specifications become a standard against which engine oil marketers are licensed to use the API Certification Mark.

Vehicle and engine manufacturers, technical societies, trade associations, lubricant and additive marketers, independent testing laboratories, and consumers play essential roles in defining and developing new minimum performance standards for engine oils. To allow balanced input from all interested industry participants, API will give strong preference to accepting engine tests that are under the jurisdiction of ASTM subcommittee D02.B0, monitored by the ASTM test monitoring center, and under the governance of an ASTM surveillance panel.

C.2 Auto/Oil Advisory Panel

The Auto/Oil Advisory Panel (AOAP) develops the specifications against which engine oil marketers are licensed to use the API Certification Mark. The AOAP guides and facilitates the development and introduction of AOAP performance specifications for passenger car engine oils.

C.2.1 Membership Updated with API Proposal

AOAP shall consist of voting and liaison members that have a material interest in developing passenger car engine oil specifications. Material interest includes the following:

- a. Any gasoline-fueled automotive engine manufacturer that recommends the standard, or
- b. Manufacturers of a gasoline-fueled automotive engine that might use an oil meeting the standard, or
- c. Manufacturers or marketers of an oil that meets the standard, or
- d. Manufacturers of a component used to formulate oil that meets the standard.

Voting members shall represent companies that are members in good standing in the API Lubricants Standards Group, ACC Petroleum Additives Panel, ILMA, Alliance of Automobile Manufacturers, or JAMA; and liaison member representatives of companies that are members in good standing in ASTM, SAE, or STLE. Representatives from the U.S. Army would also be included as liaison members.

A company that wishes to be a voting member of AOAP shall submit a written request to API that includes a brief explanation of the company's material interest in the specification and proof of membership in one of the organizations identified above. API will maintain the list of companies that have requested membership and met membership qualifications.

Companies with a material interest that participate in other trade organizations not listed in this Annex may request liaison membership by writing to API. The written request must explain the organization's interest in engine oil specifications. Representatives of companies who request membership shall be granted membership if a vote for their inclusion, taken by existing AOAP members, leads to a simple majority of affirmative votes. Such a vote can take place during either a meeting or a conference call. An organization's initial request for membership must be made at least 1 month before the initiation of a precision matrix supporting the specification.

Members must demonstrate active participation in the development of the standard by attending meetings and voting or commenting on issued ballots. Failure to attend at least one meeting per year or to vote on two consecutive letter ballots shall result in the removal of the representative from the panel roster.

API and the Alliance shall each designate a co-chair for the panel. The responsibility of the co-chairs is agreed upon by the AOAP. These typically include setting meeting agendas, reviewing actions, and calling for votes when required. API will provide administrative support such as making meeting arrangements and distributing meeting announcements and minutes.

A panel member may send a proxy to participate in the panel, and the proxy's participation counts toward a member's requirement to actively participate in the panel. If a member chooses to send a proxy, the member shall provide the name of the proxy to API in writing before the start of a scheduled AOAP meeting or conference call. Notification may be made by email or letter. Proxies are not necessary for representatives from the same company.

Changes to company voters shall be provided to API in writing.

C.2.2 Voting

The AOAP shall attempt to reach consensus on issues related to needs and the issuance and finalization of a draft specification. A quorum of two thirds of both industries (auto and oil) is required for AOAP to conduct official business. Consensus is established when substantial agreement has been reached by the panel. Substantial agreement means more than a simple majority but not necessarily unanimity. Consensus requires that all views and objections be considered and that an effort be made toward their resolution. For purposes of these procedures, consensus shall be defined as follows:

- a. Voting is balanced or weighted to ensure ratios of 50 percent Auto and 50 percent Oil.
- b. Two-thirds of Auto and two-thirds of Oil votes cast, less waivers, are affirmative.
- c. Fifty percent of all possible votes are affirmative on each side.

Consensus is defined as noted above and each negative vote shall be accompanied by the information below. A letter ballot (electronic ballot) should be used whenever negative votes are cast during AOAP meetings:

- a. Specific paragraph, section, or part negative ballot pertains to.
- b. Specific substantive reason(s) for negative vote.
- c. Proposed wording or action to resolve negative vote.

Additionally, each abstention shall be explained in writing.

Ballots shall be qualified and negatives and comments considered and resolved in accordance with the latest edition of API's *Procedures for Standards Development*.

If AOAP cannot achieve consensus on the draft specification, then ILSAC may issue a draft for industry comment pursuant to C.3.2.4. If AOAP cannot achieve consensus on the final specification, then ILSAC may issue a specification pursuant to C.3.3.2. If AOAP cannot achieve consensus on needs, the Administrative Guidance Panel will convene pursuant to C.4.3.

C.2.3 Procedures

The AOAP shall provide an adequate level of due process by ensuring the following:

- a. All meetings of the AOAP where the proposed specifications are discussed, decisions made, or votes taken are open to all interested parties.
- b. Interested parties are given a meaningful opportunity to comment on draft specifications. Comments received by the AOAP shall be reviewed and evaluated pursuant to the consensus criteria specified in C.2.2. The AOAP shall document responses to comments received on the draft specifications.
- c. Any party having a material interest in the process has the right to bring a timely appeal of an AOAP action or decision. Appeals must be submitted in writing to the Co-Chairs of the AOAP. If the objections cannot be resolved by the Co-Chairs, the appeal will be transmitted to an API appeals board for resolution. Appeals shall be addressed following the process defined in the latest edition of API's *Procedures for Standards Development*.

C.3 AOAP Development Process

The AOAP specification development process is designed to accomplish the following:

- a. Validate the need for a new specification.
- b. Achieve stakeholder consensus early in the process.
- c. Optimize the process for developing and approving new specifications.

A new specification is developed in steps, some of which are conducted in parallel and provide input to subsequent steps, as summarized in Figure C-1, Process of Developing New Engine Oil Performance Standards for the API Certification Mark.

C.3.1 Determination of Need

C.3.1.1 Request for a New Specification

Any individual, company, or association may request a new definition of oil performance that may eventually result in a new specification. To invoke the evaluation process, the new specification request must be submitted to the Co-Chairs of the AOAP and to the Chair of the API Lubricants Standards Group.

The request for a new specification must include adequate data and justification for the proposed specification. The request must demonstrate a need for significant oil performance changes to meet requirements not met by existing categories. Justification should include, but is not limited to, one or more of the following:

- a. Impending government regulations.
- b. Consumer-driven needs.
- c. New hardware design or service requirements.
- d. Field problems encountered with current oils.

Following the receipt of the new specification request, the Co-Chairs will notify ILSAC and the API Lubricants Standards Group of the proposed specification and request that the associations confirm that AOAP should evaluate the need for the specification.

C.3.1.2 Evaluation Criteria

The AOAP will work to reach a consensus position on the need and timing for the new specification by considering the following questions:

- a. What is the proposed change and why is it required?
- b. Does data presented support the request?
- c. When is it needed in the marketplace?
- d. What are the potential impacts on engines?
- e. What are the potential impacts on consumers?
- f. What are the potential impacts on the environment?
- g. How could the change affect existing API categories? Could an existing API category satisfy the need expressed?
- h. What performance and field tests are needed to properly evaluate the performance needs requested?
- i. Are the tests available now? If not, in what timeframe can the performance and field tests be developed?

The AOAP may solicit additional industry input and data at any time to assist it in reaching a decision. Other industry groups [for example, SAE, API Detroit Advisory Panel (DAP), and EMA] may be asked to provide supplemental information.

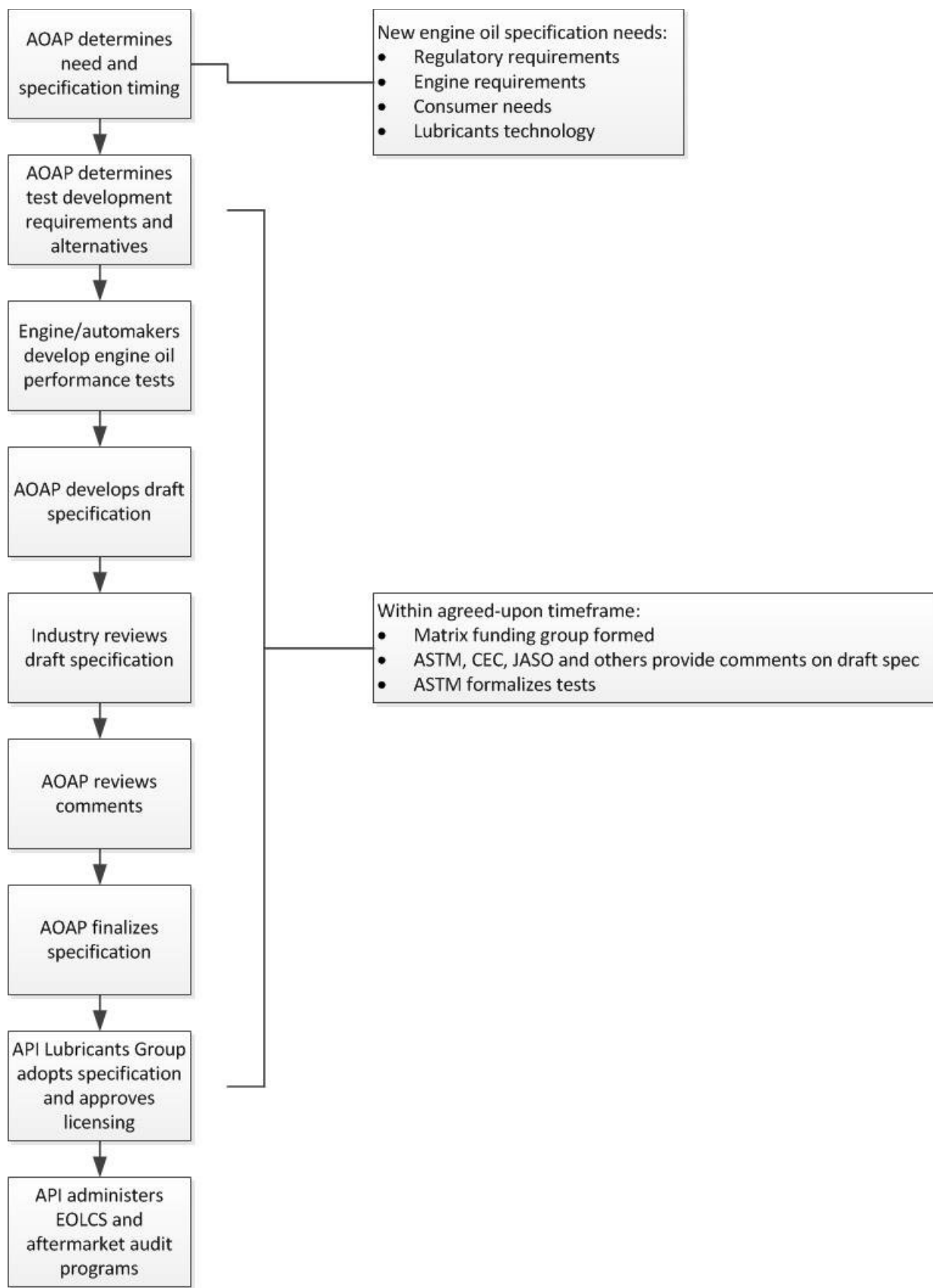


Figure C-1—Process for Developing New Engine Oil Performance Standards for API Certification Mark

C.3.1.3 Decision on Need

The AOAP shall evaluate the request pursuant to the consensus process outlined in C.2.2 and make one of the decisions below:

- a. Support the request for the new AOAP specification and proceed with development. This recommendation shall document the basis for determining that there is a need for the new specification.
- b. Deny the request.
- c. Determine that it cannot reach consensus.

The sponsor has the option of resubmitting the request with additional information if the AOAP denies the request or is unable to reach consensus. If the AOAP cannot achieve consensus on needs after reviewing the additional information, the Administrative Guidance Panel will convene pursuant to C.4.3.

C.3.2 Specification Development

When the AOAP approves the request for the development of a new specification, the AOAP will proceed with development. Parties such as ACC, ASTM, SAE, ILMA, and independent test laboratories may be requested to assist in the development process. Other national, regional, or international bodies—for example, Japanese Automobile Standards Organization (JASO) and Conseil Européen de Coordination pour les Développements des Essais de Performance des Lubrifiants et des Combustibles pour Moteurs [Coordinating European Council (CEC)]—may also be asked for input during this process.

C.3.2.1 Timing

The AOAP will draft a timetable for the development of a new specification to enable the issuance of the AOAP specification and licensing of products with the API Starburst at the earliest practicable date. That timetable will indicate the dates at which specific development milestones should be reached and the date first allowable licensing of the Starburst should occur for the new specification. The resulting timeline shall be reviewed periodically. In all timetable reviews, the date proposed for first licensing shall allow oil marketers a reasonable opportunity to perform the testing required for licensing prior to the first-license date.

Prior to the start of any precision matrixes, the elements of the timeline should be formally agreed upon by AOAP voting members, recognizing that circumstances could change the timeline and the subsequent changes shall be agreed upon by AOAP voting members before the timeline is considered in agreement by AOAP.

C.3.2.2 Identification of Test Development Needs and Alternatives

If an appropriate test method is not available, a new test method must be developed. Test procedures may be developed or modified by ASTM, CEC, JASO, or other technical societies or trade associations, an OEM, or a third-party contractor. AOAP decides the appropriateness of the tests in the proposed specification per C.2.2.

The AOAP will monitor the specification development process to ensure adherence to the approved timeline. The AOAP will also develop alternative methods of satisfying the specification needs in the specified timeline to ensure that unanticipated problems or situations will not have the potential to unduly delay specification development. If a test or a performance measurement is not ready by the scheduled time, a replacement shall be developed or the requirement dropped.

Any change in the timeline and/or change in the specification shall require AOAP approval as described in C.2.2.

C.3.2.3 Development of ILSAC Draft

C.3.2.3.1 Review of Proposed ILSAC Draft Specifications

After agreement has been reached on the need, tests and alternatives have been identified, and timing has been established, the AOAP is charged with developing a draft specification. Performance-based rather than composition-based standards should be used to the maximum extent feasible. The AOAP may consider proposed requirements submitted by any stakeholder in the engine oil specification development process (ILSAC, API, ACC, a company, an individual, or another association). After considering these inputs, the AOAP may send its proposed draft to the ASTM

Passenger Car Engine Oil Classification Panel (PCEOCP) for review within a specified timeframe. If appropriate, the AOAP may also send the proposed draft to JASO and/or CEC.

As necessary, the ASTM PCEOCP, JASO, and/or CEC will be asked to review the proposed draft, and within a specified timeframe, prepare an informal report for the AOAP to consider. The following inputs will be requested from the ASTM PCEOCP and, if necessary, JASO and CEC during this review:

- a. The groups will evaluate the proposed draft specification and limits and provide comments on whether the proposed test methods will evaluate the needs defined by the AOAP.
- b. Each group will be requested to issue a report to the AOAP that contains a summary of comments and data received during the group's proceedings.

While the AOAP may seek input from ASTM, PCEOCP, JASO, and CEC, the AOAP can proceed with specification development if the results of these reviews are not delivered within a specified timeframe. Pursuant to the consensus process specified in C.2.2, the AOAP will issue a draft AOAP specification for review and comment by all interested parties (see C.3.2.4).

C.3.2.3.2 Formalization of Tests

Once a new test becomes available (e.g., shows satisfactory discrimination of oil performance) pursuant to C.3.2.2, the appropriate industry group, for example ASTM, CEC, JASO, or other, will determine test precision.

For example, if an engine test is being developed by ASTM, the AOAP will provide a specified timeframe to ASTM. It is ASTM's responsibility to have a functioning task force or surveillance panel in place to coordinate activities and analyze test data including determining when a test is ready for matrix testing. For bench tests, ASTM must provide a method for referencing and/or calibrating each bench test that does not have an assigned surveillance panel. Based on the AOAP's agreed upon timeline, ASTM will also develop a timetable that contains, among other things, planned dates for reference oil selection, bench and engine test selection, and test method completion. The objective is to formalize the tests and establish criteria to demonstrate that the tests are precise, are reproducible, and have the ability to discriminate. All applicable engine and bench tests shall be monitored by the TMC (or equivalent) prior to incorporation into the final specification (see C.3.3).

If ASTM fails to discharge these responsibilities in a timely manner, the AOAP shall take appropriate actions to ensure that the timing identified in C.3.2.1 for implementing the specification will be met. This may include developing an AOAP specification containing alternative test methods.

C.3.2.3.3 Specification Development Funding

The testing necessary for determining precision as described in C.3.2.3.2 often requires funding. At times, funding might also be required for engine testing to establish base oil interchange (BOI) and viscosity grade read across (VGRA) guidelines, studies, and consumer education. For previous ILSAC specifications, the Alliance for Automobile Manufacturers, JAMA, API, and ACC have provided this funding. When precision and BOI/VGRA testing or other funding is required, the Lubricants Standards Group shall form a task force to evaluate the need and develop a plan for raising the funding. This funding task force will be composed of volunteers from the Lubricants Standards Group, the Alliance, ACC, ILMA, ASTM, and JAMA. For new performance standards, the funding group shall fulfill its role by at least addressing the following points:

- a. Calculate the amount of funding necessary for precision and BOI/VGRA matrix testing as recommended by the matrix design task force.
- b. Solicit funding for proposed precision and BOI/VGRA matrix testing.
- c. If necessary, modify the matrix testing design to match the funding available.
- d. Develop a Memorandum of Agreement (MOA) for precision and BOI/VGRA matrix testing.
- e. Ensure all companies and organizations that agree to fund the matrix sign the MOA.

C.3.2.4 Industry Review of ILSAC Draft Specification

The draft AOAP specification developed in C.3.2.3 will be circulated to all interested parties for comment. The AOAP will solicit comments in writing and will hold public forums as deemed appropriate. The AOAP will review the comments and data from the industry received in C.3.2.3 before determining the requirements and limits for the final specification. If there are significant changes in the requirements between the draft and the final specification, the

AOAP will conduct another comment period on the revised specification. All comment periods will be for a period of at least 30 days. A longer review period may be allowed for comments on an initial draft. If AOAP cannot achieve consensus on the draft specification, then ILSAC may issue a draft for industry comment as indicated in C.2.2 above.

In parallel with industry review of the draft AOAP specification, API will solicit data on specification demonstration oils (see item b of C.3.3.1) in such a manner as to maintain confidentiality of individual company data.

C.3.3 Specification Finalization

C.3.3.1 Review of Development Process

At or near the end of the development of the new specification (e.g., prior to C.3.3.2), the AOAP shall confirm that the following items have been addressed:

- a. (1) The tests developed satisfy the needs agreed to by the AOAP, (2) the performance descriptions contained in the proposed consumer language are met by the tests proposed for the specification, (3) the timetable is acceptable, (4) and the test methods chosen to define the new standard represent the best means of establishing the new performance level.
- b. Available data on demonstration oils have been reviewed. A demonstration oil shows the technical and commercial viability of the proposed new engine oil specification. This is an oil formulated with base stock and additive components expected to be commercially available when licensing of the new specification begins. Ideally the oils shall have been tested in and passed, at the proposed limits, all engine, chemical, physical, and bench tests required in the draft specification, according to the ACC Code of Practice¹ in effect at the time the tests are run (for engine tests). Registration is not needed, but stand calibration is required.
- c. If sufficient information on a demonstration oil is not available, AOAP will re-evaluate the draft specification for technical and commercial viability. While information on a demonstration oil is useful as input to the limit-setting process and may help achieve consensus, the demonstration oil is not required prior to achieving the AOAP consensus pursuant to item a of C.3.3.2.
- d. All industry comments on the proposed specification have been reviewed to ensure that they have been considered and addressed by the AOAP in sufficient detail.

C.3.3.2 Approval of the Final AOAP Specification

When AOAP agrees that the original goals and objectives of the specification appear to have been met, AOAP will promptly convene to vote on acceptance of the final AOAP specification. If AOAP approves the final specification in accordance with the procedures in C.2.2, the specification will be forwarded to the API Lubricants Standards Group for consideration for adoption into API 1509.

C.4 API Lubricants Standards Group Adoption of AOAP Specification

C.4.1 A meeting of the API Lubricants Standards Group will be scheduled as soon as possible after API has received the final AOAP specification or the specification has been issued unilaterally by ILSAC. The Lubricants Standards Group will vote whether to accept the AOAP specification or the specification issued unilaterally by ILSAC as the basis for licensing of the API Starburst via letter ballot pursuant to API *Procedures for Standards Development*.

The Chair of the Lubricants Standards Group will resolve negative ballots and comments in accordance with the latest edition of API's standards procedures.

C.4.2 When submitting an AOAP specification that has been approved pursuant to C.3.3.2, AOAP must provide documentation that the following criteria have been satisfied:

- a. Complied with due process requirements.
- b. Provided justification for overriding any technical objections raised during the AOAP process.
- c. Provided data on at least one demonstration oil meeting all of the requirements defined in item b of C.3.3.1 at the time the specification is delivered, provided such data has been made available.
- d. Showed that the AOAP specification oil will be reasonably achievable and will likely be widely available to consumers within the specified timeframe (e.g., recommended additional time for compliance).

¹ Provided the AOAP has accepted the Code of Practice as a basis for engine testing.

- e. Based on data from items c and d above, showed that the AOAP specification provides significantly more needed benefits to consumers (as identified in C.3.1) than any other specification proposal the AOAP considered.

C.4.3 If the API Lubricants Standards Group does not adopt the AOAP specification or if the AOAP cannot achieve consensus on needs, the Administrative Guidance Panel will either withdraw the request for a new specification or convene to consider dissolution of the Certification system.

Annex D

Developing New Diesel Oil Performance Standards for API C Service Categories

D.1 General

One of the objectives of API's voluntary Engine Oil Licensing and Certification System (EOLCS) is to help consumers identify lubricants that meet the needs of their vehicles. This is accomplished through the use of category designations within the API Service Symbol. These categories are based on engine oil performance specifications that require close coordination and consensus among the affected parties. Technical societies, trade associations, lubricant and additive marketers, vehicle and engine manufacturers, independent testing laboratories, and consumers play essential roles in defining and developing new minimum lubricant performance standards. This annex outlines the roles and responsibilities of each organization in the heavy-duty diesel oil specification development process for API licensing.

API is responsible for licensing engine oil marketers against and enforcement of lubricant performance standards adopted for use in EOLCS. The API Lubricants Standards Group must grant final approval to any new category and recommend its inclusion in EOLCS.

D.2 API C Service Categories for Diesel Oils

The C Service Category Development Process for diesel oils is designed to accomplish the following:

- a. Justify and validate the need for a new category.
- b. Achieve stakeholder consensus early in the process.
- c. Establish funding sources for all necessary category components.
- d. Optimize the process for developing and approving new categories.

A new C category is developed in three phases, as summarized in Figure D-1.

D.3 Category Development Phases

D.3.1 Phase 1: Category Request/Evaluation

D.3.1.1 Sponsor

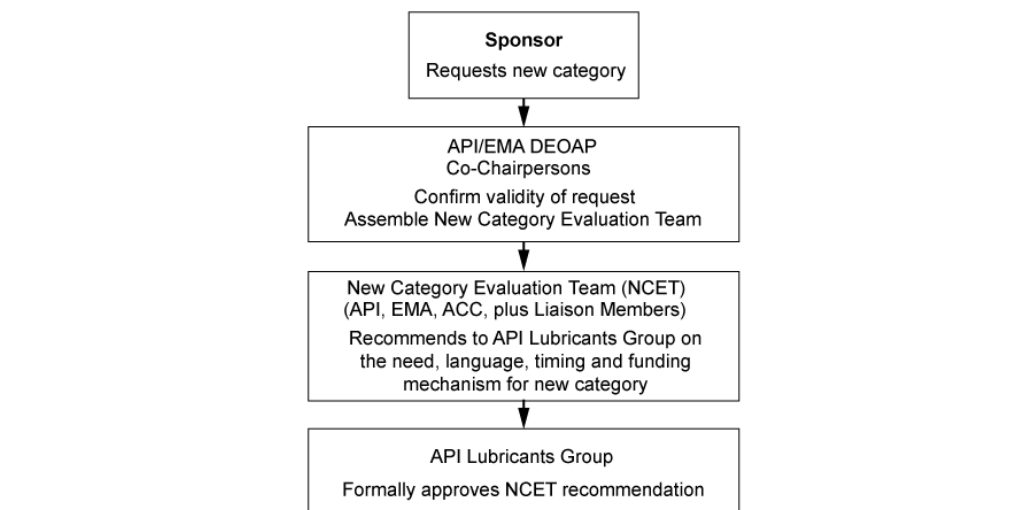
A new definition of oil performance that may eventually result in a new category can be requested by any individual, company, or association (see Figure D-2). This party is referred to as the sponsor of the request.

D.3.1.2 Evaluation Process

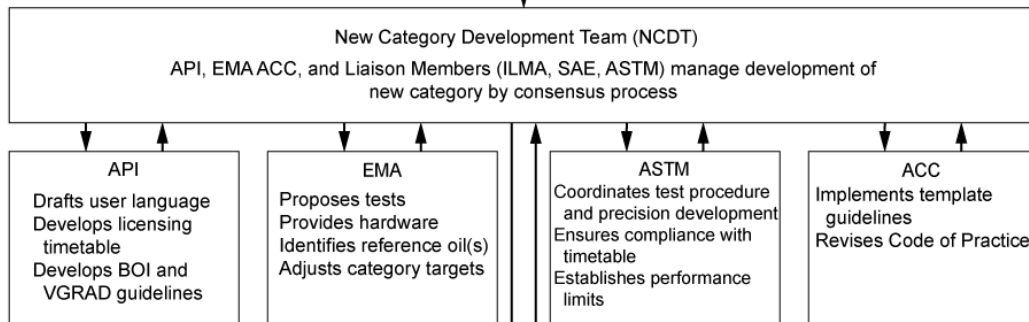
The purpose of the evaluation process is to determine whether there is a need for the proposed category. To invoke the evaluation process, a sponsor must submit a new category request to the Chairpersons of the Joint API/EMA Diesel Engine Oil Advisory Panel (DEOAP).

The DEOAP is a formally constituted committee composed of representatives from API and EMA member companies who deal with heavy-duty lubricant matters affecting the two trade associations. The DEOAP will guide and facilitate the introduction of proposed heavy-duty performance categories. In addition to DEOAP members, liaison representatives from allied organizations—for example, ACC, SAE, ASTM, ILMA, and the U.S. Army—may also participate.

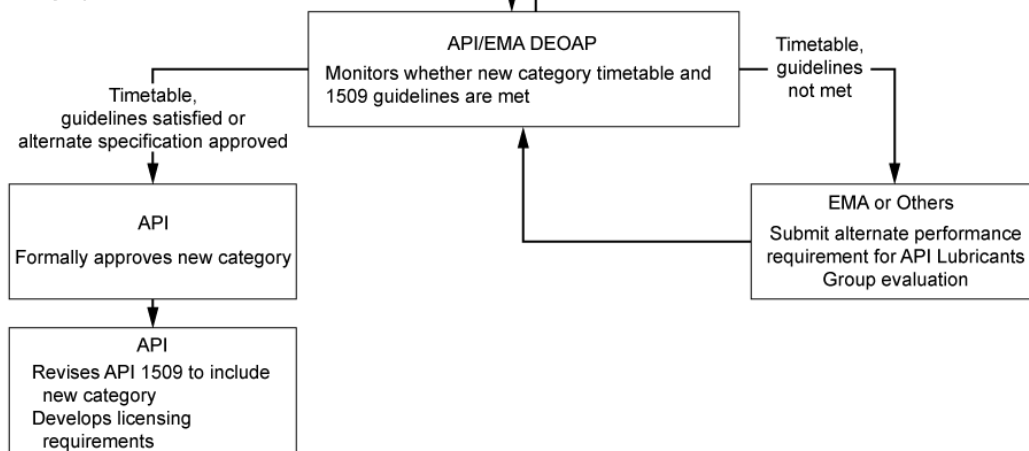
PHASE 1



PHASE 2



PHASE 3



ACC = American Chemistry Council
 ASTM = American Society of Testing and Materials
 BOI = Base Oil Interchange
 DEOAP = Diesel Engine Oil Advisory Panel

EMA = Engine Manufacturers Association
 ILMA = Independent Lubricant Manufacturers Association
 SAE = Society for Automotive Engineers
 VGRA = Viscosity Grade Read-Across

Figure D-1—Heavy Duty Category Request/Approval Process

The Chairpersons of the DEOAP will acknowledge the receipt of the new category request and will work with the category sponsor to furnish the DEOAP with the information necessary to make a decision. The DEOAP has 6 months from the date that all the requested information has been presented to make a decision to either accept or reject the request for a new category. If no decision on the request is made within 6 months, it is automatically forwarded to the API Lubricants Standards Group for its members' information and disposition.

The sponsor must provide adequate data and justification for the proposed category. The request must demonstrate a need for significant oil performance changes to meet requirements not met by existing categories. Justification should include, but is not limited to, one or more of the following:

- a. Likely or impending government regulations.
- b. Consumer-driven needs.
- c. New hardware design or service requirements.

D.3.1.3 New Category Evaluation Team (NCET)

The Chairpersons of the DEOAP will ask API, EMA, and ACC to appoint representatives to serve on an ad hoc review team that will formally evaluate each request for a new category—a New Category Evaluation Team (NCET).

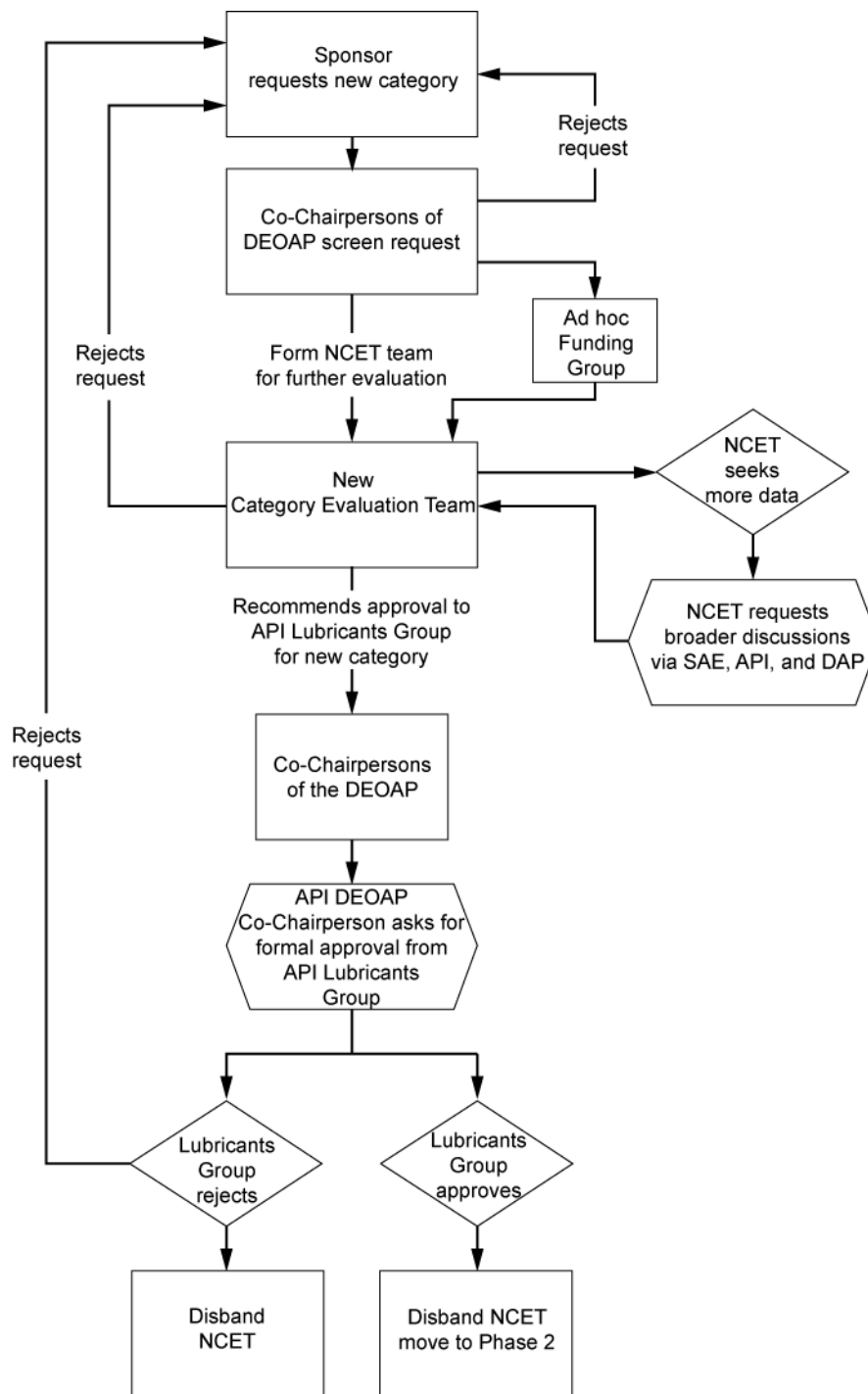
NCET membership will be limited to the minimum number needed to accomplish the work while remaining consistent with full technical representation. This number may vary depending on the requested category. API, EMA, and ACC may each have up to three representatives on the NCET. At the first meeting, the NCET will develop working rules, elect a chairperson, decide who to invite as liaison representatives, and request a meeting with the sponsor. The API, EMA, and ACC representatives are equal participants and decision making by consensus will be strongly encouraged. However, if that is not possible, decision making will be assumed by API and EMA representatives through majority vote. In the case of a tie vote, the request will be addressed by the DEOAP. All NCET meetings will be open to API, EMA, and ACC member company representatives and others.

D.3.1.3.1 NCET Evaluation Responsibilities

The NCET will work to reach consensus positions on the following questions:

- a. What is the proposed change and why is it required?
- b. Does data presented support the request?
- c. When is it needed in the marketplace?
- d. What are the potential impacts on engines?
- e. What are the potential impacts on consumers?
- f. What are the potential impacts on the environment?
- g. How could the change affect existing API categories?
- h. Are performance tests available that properly evaluate the performance needs requested?
- i. Do the perceived benefits outweigh the projected costs?
 - 1. How much will it cost to develop test procedures and determine precision and define, if necessary, Base Oil Interchange (BOI) and Viscosity-Grade Read Across (VGRA) Guidelines for the proposed category?
 - 2. What is the estimated total cost to carry out projected work for the new category if the need is approved?

Note: The DEOAP is responsible for calculating an estimated total cost for developing the proposed category and ensuring that an agreement in principle is reached on category development funding before submitting the request to the API Lubricants Standards Group. To that end, the DEOAP Co-Chairpersons will establish an ad hoc Task Force for that specific purpose. This group should include representatives from the principal stakeholders in the process: API, EMA, ACC, independent test laboratories, and other parties deemed appropriate.



DAP = Detroit Advisory Panel

Figure D-2—Phase 1: Category Request/Evaluation

The NCET may solicit additional industry input and data at any time to assist it in reaching a decision. Any industry group [e.g., SAE, API Detroit Advisory Panel (DAP), and EMA] can be asked to provide supplemental information.

The NCET's specific charge is to evaluate the request and to make one of the decisions below:

- Support the request for the new category and recommend to DEOAP that the request be forwarded to the API Lubricants Standards Group for consideration to proceed with category development. This recommendation shall identify the need for the category, recognize its feasibility, provide a timetable for