



AMERICAN PETROLEUM INSTITUTE  
EOLCS™



# API Engine Oil Program

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April 2016

# AMERICAN PETROLEUM INSTITUTE (API)

600+ member non-profit trade association  
that represents all aspects of America's oil  
and natural gas industry



# API ENGINE OIL STANDARDS

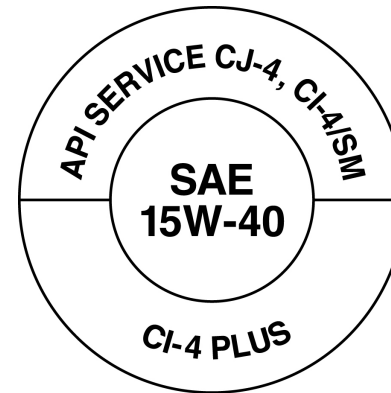
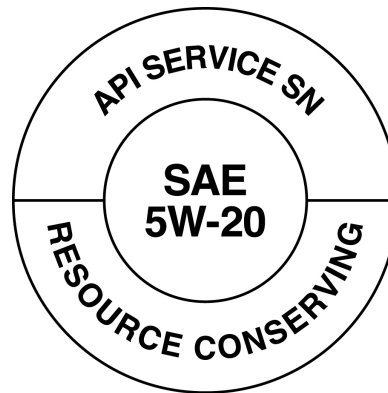
More than

- 65 years setting engine oil performance standards
  - API 1509, *Engine Oil Licensing and Certification System*
  - API 1525, *Bulk Oil Testing, Handling and Storage Guidelines*
  - API 1525A, *Bulk Engine Oil Chain of Custody and Quality Documentation*
- 20 years licensing oils against standards
- 20 years auditing licensed and unlicensed oils



# EOLCS

API-licensed oils easy to find

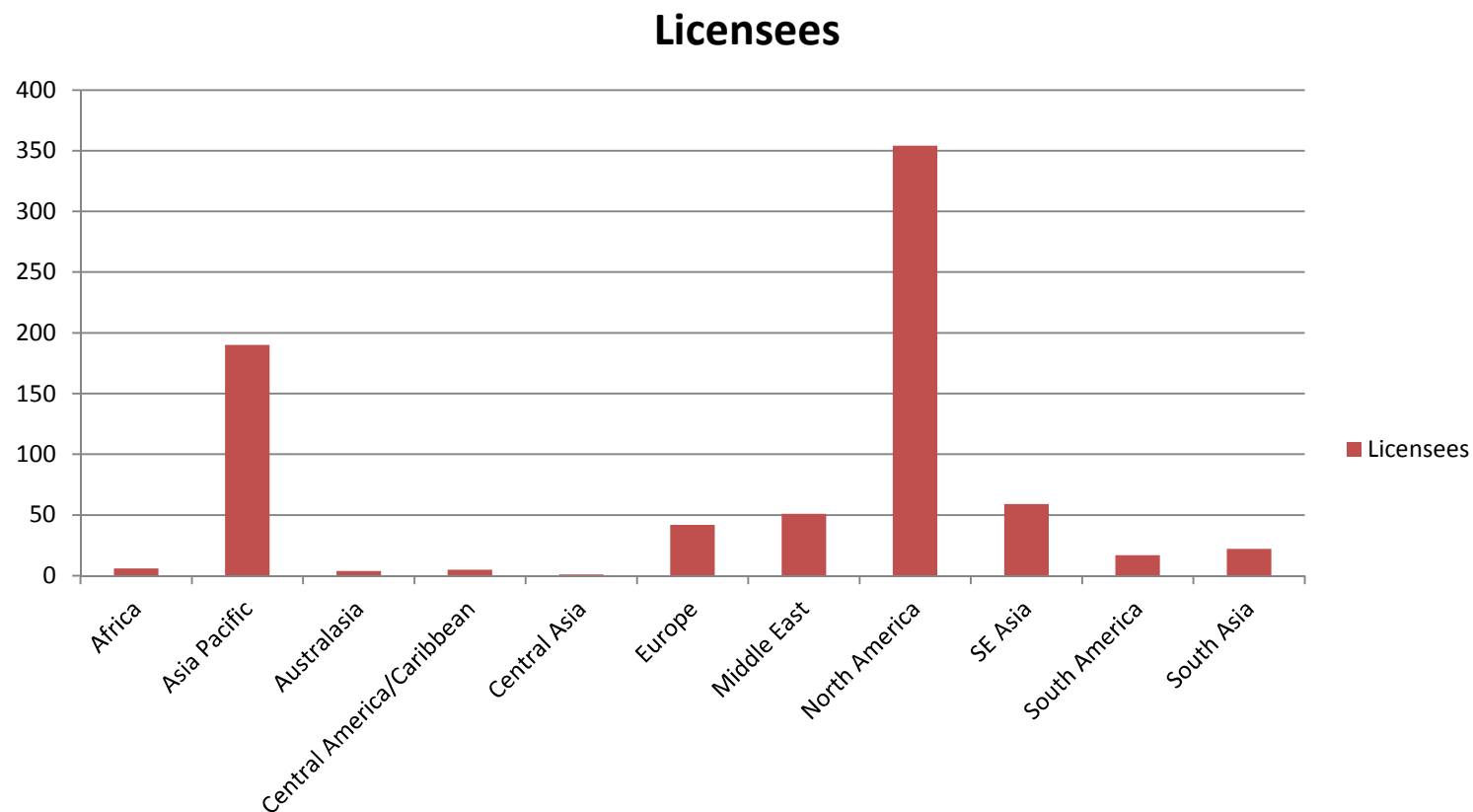


# EOLCS LICENSEES (MARCH 2015)

- 751 licensed oil marketers
- In 63 countries
- 14,000 licensed products
- Viewable at  
<https://engineoil.api.org/Directory/EolcsSearch>



# EOLCS LICENSEES BY REGION (MARCH 2015)



## Search Results

[Back To Search](#)

COMPANY NAME	LICENSE #	EXPIRATION	CITY	STATE/PROVINCE	COUNTRY	REGION
AMERICAN HI-TECH PETROLEUM & CHEMICALS INC., DBA AMTECOL	2142	31-Mar-2017	RICHMOND	CA	UNITED STATES	North America
AMERICAN HONDA MOTOR COMPANY, INC	0861	31-Mar-2017	TORRANCE	CA	United States	North America
Biosynthetic Technologies	3017	31-Mar-2017	IRVINE	CA	United States	North America
CHALET PRODUCTS COMPANY	2004	31-Mar-2017	LOS ANGELES	CA	UNITED STATES	North America
CHEVRON PRODUCTS COMPANY	0090	31-Mar-2017	SAN RAMON	CA	UNITED STATES	North America
FULL BORE Auto Lube & Parts Co.,Ltd.,Lnc	3197	31-Mar-2017	LOS ANGELES	CA	United States	North America
G-C Lubricants Company	3176	31-Mar-2017	SAN CARLOS	CA	United States	North America
J M OIL CO.	2435	31-Mar-2017	SANTA FE SPRINGS	CA	UNITED STATES	North America
Jankovich Company	3165	31-Mar-2017	PARAMOUNT	CA	United States	North America
KAWASAKI MOTORS CORP., U.S.A.	2788	31-Mar-2017	IRVINE	CA	United States	North America
Lubricating Specialties Company	0215	31-Mar-2017	PICO RIVERA	CA	United States	North America
LUCAS OIL PRODUCTS INC.	2322	31-Mar-2017	CORONA	CA	United States	North America
LUXX COMPANY, LLC	3175	31-Mar-2017	MONROVIA	CA	United States	North America
MAXUM PETROLEUM	2398	31-Mar-2017	COMPTON	CA	United States	North America
Maxx Oil, LLC	3114	31-Mar-2017	CHINO	CA	United States	North America
MIT AUTOMOBILE SERVICE CO.						

The current and previous ILSAC standards and API Service Categories are listed here. Vehicle owners should refer to their owner's manuals before consulting these charts. Oils may have more than one performance level.

For automotive gasoline engines, the latest ILSAC standard or API Service Category includes the performance properties of each earlier category and can be used to service older engines where earlier category oils were recommended.

### ILSAC STANDARD FOR PASSENGER CAR ENGINE OILS

Name	Status	Service
<b>GF-5</b>	<b>Current</b>	Introduced in October 2010, designed to provide improved high temperature deposit protection for pistons and turbochargers, more stringent sludge control, improved fuel economy, enhanced emission control system compatibility, seal compatibility, and protection of engines operating on ethanol-containing fuels up to E85.
<b>GF-4</b>	<b>Obsolete</b>	Use GF-5 where GF-4 is recommended.
<b>GF-3</b>	<b>Obsolete</b>	Use GF-5 where GF-3 is recommended.
<b>GF-2</b>	<b>Obsolete</b>	Use GF-5 where GF-2 is recommended.
<b>GF-1</b>	<b>Obsolete</b>	Use GF-5 where GF-1 is recommended.

### GASOLINE ENGINES (Follow your vehicle manufacturer's recommendations on oil performance levels)

Category	Status	Service
<b>SN</b>	<b>Current</b>	Introduced in October 2010, designed to provide improved high temperature deposit protection for pistons, more stringent sludge control, and seal compatibility. API SN with Resource Conserving matches ILSAC GF-5 by combining API SN performance with improved fuel economy, turbocharger protection, emission control system compatibility, and protection of engines operating on ethanol-containing fuels up to E85.
<b>SM</b>	<b>Current</b>	For 2010 and older automotive engines.
<b>SL</b>	<b>Current</b>	For 2004 and older automotive engines.
<b>SJ</b>	<b>Current</b>	For 2001 and older automotive engines.
<b>SH</b>	<b>Obsolete</b>	<b>OBSOLETE:</b> For 1996 and older automotive engines.
<b>SG</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most gasoline-powered automotive engines built after 1993. May not provide adequate protection against build-up of engine sludge, oxidation, or wear.
<b>SF</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most gasoline-powered automotive engines built after 1988. May not provide adequate protection against build-up of engine sludge.
<b>SE</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most gasoline-powered automotive engines built after 1979.
<b>SD</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most gasoline-powered automotive engines built after 1971. Use in more modern engines may cause unsatisfactory performance or equipment harm.
<b>SC</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most gasoline-powered automotive engines built after 1967. Use in more modern engines may cause unsatisfactory performance or equipment harm.
<b>SB</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most gasoline-powered automotive engines built after 1951. Use in more modern engines may cause unsatisfactory performance or equipment harm.
<b>SA</b>	<b>Obsolete</b>	<b>CAUTION:</b> Contains no additives. Not suitable for use in most gasoline-powered automotive engines built after 1930. Use in modern engines may cause unsatisfactory performance or equipment harm.



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Engine Oil Licensing and Certification System | 1220 L Street, NW | Washington, DC 20005-4070 | USA | Telephone: 202-482-8516 | Email: [edc@api.org](mailto:edc@api.org) | [www.api.org/eolcs](http://www.api.org/eolcs)  
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## DIESEL ENGINES (Follow your vehicle manufacturer's recommendations on oil performance levels)

Category	Status	Service
<b>CJ-4</b>	<b>Current</b>	For 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 drain interval. CJ-4 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. API CJ-4 oils exceed the performance criteria of API CI-4 with CI-4 PLUS, CI-4, CH-4, CG-4 and CF-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.
<b>CI-4</b>	<b>Current</b>	Introduced in 2002. For high-speed, four-stroke engines designed to meet 2004 exhaust emission standards implemented in 2002. CI-4 oils are formulated to sustain engine durability where exhaust gas recirculation (EGR) is used and are intended for use with diesel fuels ranging in sulfur content up to 0.5% weight. Can be used in place of CD, CE, CF-4, CG-4, and CH-4 oils. Some CI-4 oils may also qualify for the CI-4 PLUS designation.
<b>CH-4</b>	<b>Current</b>	Introduced in 1998. For high-speed, four-stroke engines designed to meet 1998 exhaust emission standards. CH-4 oils are specifically compounded for use with diesel fuels ranging in sulfur content up to 0.5% weight. Can be used in place of CD, CE, CF-4, and CG-4 oils.
<b>CG-4</b>	<b>Obsolete</b>	<b>OBsolete:</b> Introduced in 1995. For severe duty, high-speed, four-stroke engines using fuel with less than 0.5% weight sulfur. CG-4 oils are required for engines meeting 1994 emission standards. Can be used in place of CD, CE, and CF-4 oils.
<b>CF-4</b>	<b>Obsolete</b>	<b>OBsolete:</b> Introduced in 1990. For high-speed, four-stroke, naturally aspirated and turbocharged engines. Can be used in place of CD and CE oils.
<b>CF-2</b>	<b>Obsolete</b>	<b>OBsolete:</b> Introduced in 1994. For severe duty, two-stroke-cycle engines. Can be used in place of CD-II oils.
<b>CF</b>	<b>Obsolete</b>	<b>OBsolete:</b> Introduced in 1994. For off-road, indirect-injected and other diesel engines including those using fuel with over 0.5% weight sulfur. Can be used in place of CD oils.
<b>CE</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most diesel-powered automotive engines built after 1994.
<b>CD-II</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most diesel-powered automotive engines built after 1994.
<b>CD</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most diesel-powered automotive engines built after 1994.
<b>CC</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most diesel-powered engines built after 1990.
<b>CB</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most diesel-powered engines built after 1961.
<b>CA</b>	<b>Obsolete</b>	<b>CAUTION:</b> Not suitable for use in most diesel-powered engines built after 1959.

## SAE VISCOSITY GRADES: PASSENGER CAR MOTOR OIL

Multigrade oils such as SAE 5W-30 and 10W-30 are widely used because, under all but extremely hot or cold conditions, they are thin enough to flow at low temperatures and thick enough to perform satisfactorily at high temperatures. Note that vehicle requirements may vary. **Follow your vehicle manufacturer's recommendations on SAE oil viscosity grade.**

### If lowest expected outdoor temperature is

0°C (32°F)

-18°C (0°F)

Below -18°C (0°F)

### Typical SAE viscosity grades for passenger cars

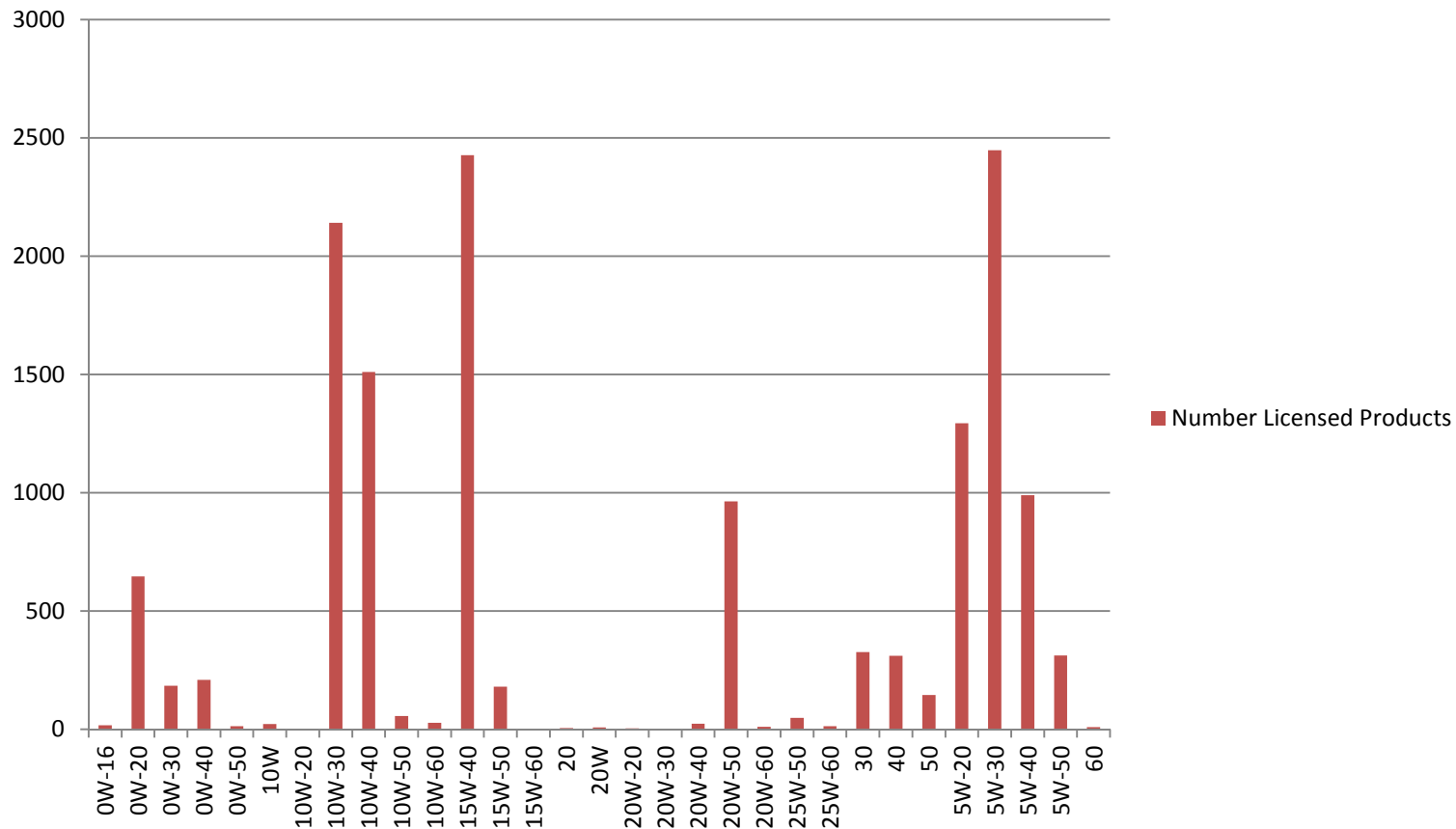
0W-20, 0W-30, 5W-20, 5W-30, 10W-30, 10W-40, 20W-50

0W-20, 0W-30, 5W-20, 5W-30, 10W-30, 10W-40

0W-20, 0W-30, 5W-20, 5W-30

# PRODUCTS LICENSED GLOBALLY BY VISCOSITY GRADE

Number Licensed Products






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[www.api.org/eolcs](http://www.api.org/eolcs)

# ONLINE SYSTEM

<https://engineoil.api.org/AccountManager/WelcomeMarketer>



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Engine Oil Licensing

ABOUT EOLCS | CONTACT US | HELP

Welcome!

View Licensee Directory

Register | Login

EOLCS System is Live!

API is pleased to announce that we have launched an online application system for the Engine Oil Licensing and Certification System. Gone are the days when licensees had to complete long and complicated forms. Now, current and prospective licensees can request licensing, manage their products and formulations and renew their license online. This system is long overdue. API hopes all licensees find the online system useful and efficient. If you have any questions or comments, please contact API through the Helpdesk at [teamolcs@api.org](mailto:teamolcs@api.org).

Announcements

2016 EOLCS Program Update

In 2016 the Engine Oil Licensing and Certification System program will be releasing new service categories and making changes to the existing fee structure. Please [click here](#) to view the full announcement.

FAQs

Account Access

Company and Contact Account Information

DEF and MOM

Formulations

Migrated Data

Payments and Renewals

Products

Supplying Formulations on Behalf of Another Company

Technical Review

Traceability Code

Updating Company and Contact Information

User Guide and Helpdesk

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**NEXT HDEO**



# HDEO DEVELOPMENT TEAM

## Oil Members

Afton	Oronite
Chevron	Shell
Evonik	Total
ExxonMobil	Valvoline
Infineum	Lubrizol
Motiva	
Neste	

## OEM Members

Caterpillar  
Cummins  
Daimler  
John Deere  
Navistar  
PACCAR  
Volvo



# API CK-4 & FA-4 APPROVED

- API CK-4 & FA-4 (formerly PC-11A & B) approved by API February 2016
  - First licensing December 1, 2016
    - API licenses start displaying CK-4 and FA-4 brands on December 1
    - No use of new categories in API marks before that date
    - Marketers free to claim new performance in informational materials and descriptions
  - Just not in API Donut!



# API CK-4

- For 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.
- For use in all applications with diesel fuels ranging in sulfur content up to 500 ppm
  - Greater than 15 ppm (0.0015% by weight) sulfur fuel may impact exhaust aftertreatment system durability and/or oil drain interval
  - Effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used.
- Provides 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.
- Exceeds performance criteria of API CJ-4, CI-4 PLUS, CI-4, and CH-4



# API FA-4

- 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
- For use in on-highway applications with diesel fuel sulfur content up to 15 ppm (0.0015% by weight)
  - Blended to high temperature high shear (HTHS) viscosity range of 2.9cP-3.2cP to assist in reducing GHG emissions
  - Effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used
- Provides 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
- Not interchangeable or backward compatible with API CK-4, CJ-4, 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
- Not recommended for use with fuels having greater than 15 ppm sulfur





# API CK-4 & FA-4

Characteristic	CK-4 (High HTHS)	FA-4 (Low HTHS)	Test That Measures Parameter (new)
Piston Deposits, Fe and Oil Consumption	X	X	C-13
Piston Deposits, Al and Oil Consumption	X	X	1N
Ring and Liner Wear	X	X	T12 (New merit system)
Bearing Corrosion, Oxidation, Nitration	X	X	T-13
Soot Valvetrain Wear (Abrasive and Rolling)	X	X	RFWT
Soot Valvetrain Wear (Sliding Wear)	X	X	ISB
Soot / EGR/ Valvetrain Wear/Valve Stem / Guide Wear (Abrasive and Corrosive)	X	X	ISM
Thermal Stability (Oxidation)	X	X	T13
Oil Aeration	X	X	Cat Aeration Test
Soot/Viscosity in EGR Engines	X	X	T11
Elastomer Compatibility	X	X	ASTM D7216
Used Oil Viscometrics (Low Temp)	X	X	MRV (T11)
High Temperature Corrosion	X	X	HTCBT
Shear Stability	KO 90 Pass	KO 90 Pass	12.8cSt min Xw-40 (ex. 0W-40); XW-30 stay in grade
Volatility	13% max	13% max	NOACK (D5800)
Foaming	X	X	ASTM D892
Filter Plugging/ Sludge	X	X	ISM
Chemical Limits (Ash, Phos., Sulfur)	X	X	D874, D4951, D2622
High Temperature/High Shear Limit (Fresh Oil)	3.5cP min	2.9 – 3.2 cP	HTHS (D4683)
High Temperature/High Shear Limit (After KO 90)	3.4 min	2.8 min	HTHS (D4683)

Blue = existing test

Fuchsia = replacement test

Yellow = new test/limit



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[www.api.org/eolcs](http://www.api.org/eolcs)

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# NEED TO GET WORD OUT



# SURVEY SUMMARY

Based on independent survey conducted by API, dealers, fleet managers, drivers, owner/operators and retail workers need to be taught about new categories

- Survey respondents claimed to know what they put into their trucks
  - 67% say they know current oil specs
  - But dive deeper into data, respondents equate viscosity grade with spec so spec equals SAE 15W-40
- API Service Symbol Donut meant little to respondents
  - No one looking at back of diesel oil packages
  - More troubling, 65% stated they are not aware of proposed API CK-4 and API FA-4 specs
- Some comments worth reading
  - “Can you mix these? Or is it like synthetic and traditional ... they can’t be mixed ...?”
  - “Diesel has always been 15W-40 ... I don’t know that I would switch from 15W-40 even if they told me to ...”
  - “I don’t get how they are different viscosities. They are the same ... they’re both 10W-30. That’s the viscosity to me ... and it’s already different than what I’m used to.”

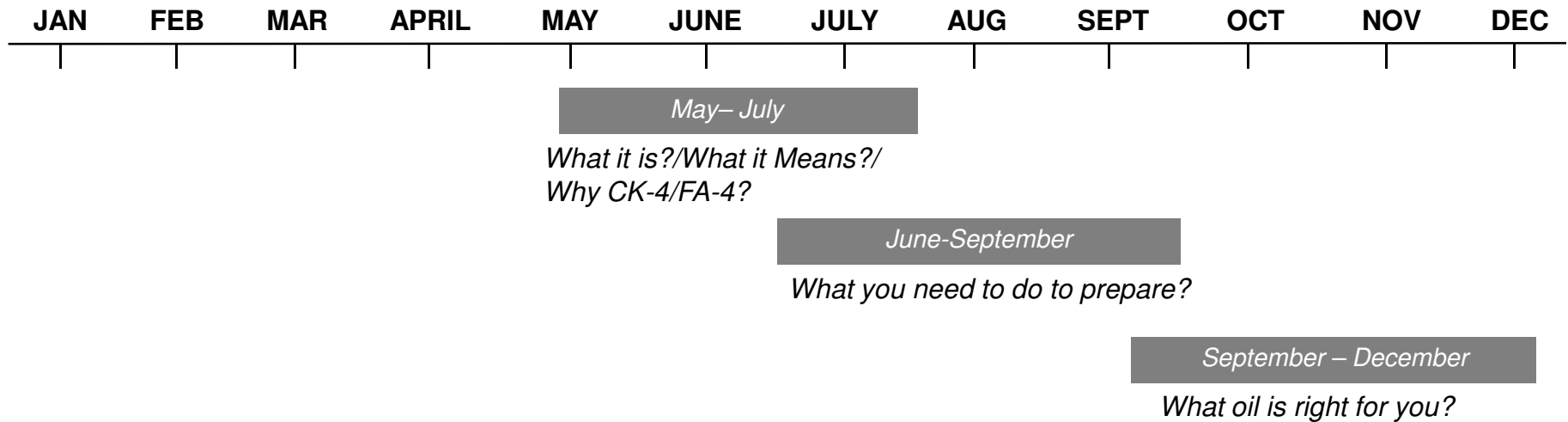


# 2016 CAMPAIGN

- Promote to industry and consumers importance of using API-quality oils and following owner's manual recommendations
  - PR-firm managed at API direction
  - Social media
  - Digital marketing targeted toward dealers, fleet managers, drivers, owners/operators to start
  - Radio and other forms of media in key regions
- Educate consumers on new diesel oil categories being introduced in 2016
- Increase testing of products in marketplace to ensure quality of growing number of viscosities and product types and bulk oils
- Modify Donut



# THREE-PHASED 2016 STORY



## KEY METHODS

- Run full-page/4-color ads
- Focus media in trade pubs
- Maximize audience penetration with media across appropriate sectors of trucking, construction and ag
- Secure multiple digital ad units within publication online platforms and newsletters for significant share of voice
- Place heavy spot loads for radio (Road Dog Radio) across day-spots



# IT'S TIME FOR AN OIL CHANGE.

There's a big change happening to engine oil. Huge. And if you drive a diesel engine vehicle, it's going to affect you directly. With better engine protection, better fuel economy and a better livelihood.

All you have to do is learn if you're a CK-4 or an FA-4. That's because the American Petroleum Institute has led in the creation of two new categories of engine oil specifications. And knowing which one you are can make all the difference in how your diesel engine performs. If your engine is a model year 2018 or older, you're a CK-4. Anything after that makes you an FA-4. Guess change doesn't have to be difficult after all.

To learn more about which engine oil you are, visit us at [engineoilmatters.com](http://engineoilmatters.com).



# SOCIAL MEDIA

*Educate target audience on CK-4/FA-4 and forthcoming new standards through highly targeted social media campaign by utilizing social media presence*

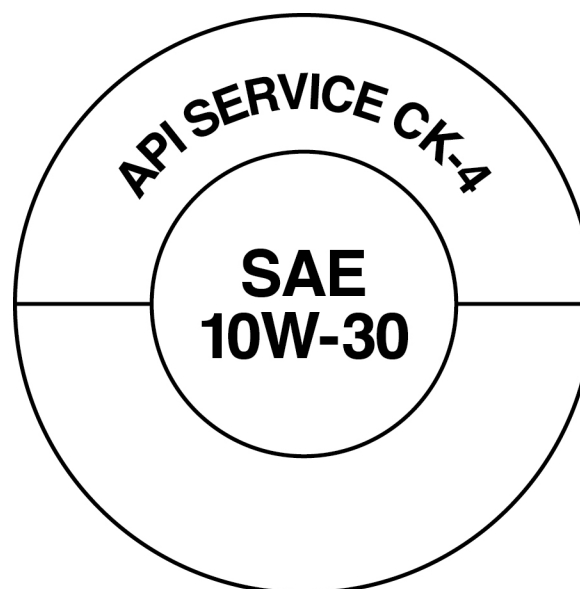
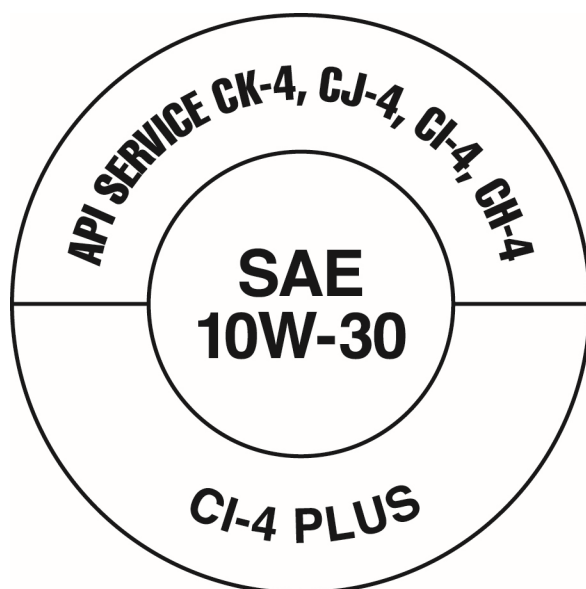
- Launch social media accounts called “Diesel Oil Matters”
- Utilize highly visual and quickly consumable content to engage target audience
- Develop engaging campaigns that will drive interaction within community and with FA-4/CK-4 content
- Employ social advertising to begin building community and increasing awareness about FA-4/CK-4





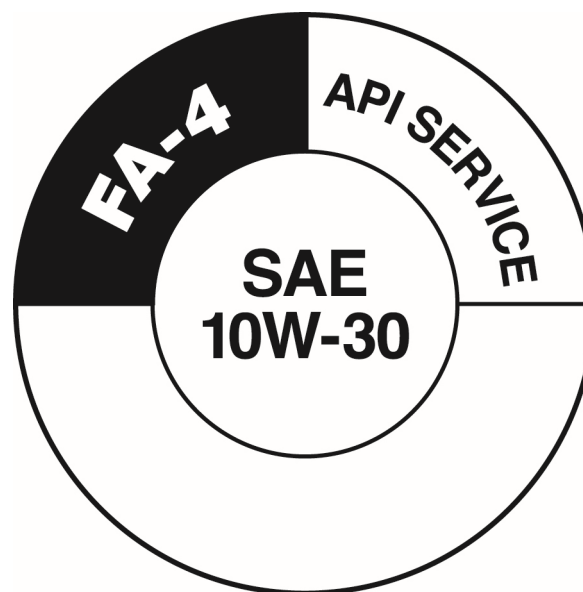
# CK-4 DONUT

**No change**



# FA-4 DONUT

Yes change



## BENEFITS FOR LICENSEES

- Signifies **Quality**.... What matters most after all
- **Differentiates** oil marketer as one to trust in marketplace
- Grants **right** to use API Starburst and Donut
- **Identifies** marketer through online Directory
- Benefits from **API Aftermarket Audit** on occasion
  - Not just condition-monitoring
- **Consumers** get what they need
  - **Quality** products
  - Engine **protection**





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# QUESTIONS?



# THANK YOU

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