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TO: API Engine Oil Licensing and Certification System (EOLCS) Licensees
API Lubricants Group
Other Interested Parties

SUBJECT: Addendum 6
API 1509, *Engine Oil Licensing and Certification System*
17th Edition, September 2012 (Addendum 1 October 2014)

API's Lubricants Group has approved by letter ballot the following changes to Annex G Table G-5 of the 17th Edition of API 1509 (see Attachment 1). A complete revision of API 1509 is currently being prepared that will incorporate recently released Addendums 2 through 6.

These changes are effective as of February 8, 2017. If you have questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Kevin Ferrick".

**Table G-5—Requirements for API Service Category SN and
API SN with Resource Conserving**

| | API SN | API SN | API SN with Resource Conserving |
|---|---|---------------------------|---------------------------------------|
| | SAE 0W-16, SAE 5W-16, SAE 0W-20, SAE 5W-20, SAE 0W-30, SAE 5W-30, SAE 10W-30 | Other Viscosity Grades | All Viscosity Grades ^a |
| Engine Test Requirements^a | | | |
| ASTM D7320 (Sequence IIIG) | | | |
| Kinematic viscosity increase @ 40°C, % | 150 (max) | 150 (max) | 150 (max) |
| Average weighted piston deposits, merits | 4.0 (min) | 4.0 (min) | 4.0 (min) |
| Hot stuck rings | None | None | None |
| Average cam plus lifter wear, µm | 60 (max) | 60 (max) | 60 (max) |
| Or | | | |
| ASTM D8111 (Sequence IIIH) | | | |
| Kinematic viscosity increase @ 40°C, % | 150 (max) | 150 (max) | 150 (max) |
| Average weighted piston deposits, merits | 3.7 (min) | 3.7 (min) | 3.7 (min) |
| Hot stuck rings | None | None | None |
| ASTM D6891 (Sequence IVA) | | | |
| Average cam wear (7 position avg), µm | 90 (max) | 90 (max) | 90 (max) |
| ASTM D6593 (Sequence VG)^b | | | |
| Average engine sludge, merits | 8.0 (min) | 8.0 (min) | 8.0 (min) |
| Average rocker cover sludge, merits | 8.3 (min) | 8.3 (min) | 8.3 (min) |
| Average engine varnish, merits | 8.9 (min) | 8.9 (min) | 8.9 (min) |
| Average piston skirt varnish, merits | 7.5 (min) | 7.5 (min) | 7.5 (min) |
| Oil screen sludge, % area | 15 (max) | 15 (max) | 15 (max) |
| Oil screen debris, % area | Rate & report | Rate & Report | Rate & Report |
| Hot-stuck compression rings | None | None | None |
| Cold stuck rings | Rate & report | Rate & report | Rate & Report |
| Oil ring clogging, % area | Rate & report | Rate & report | Rate & Report |
| ASTM D7589 (Sequence VID)^c | | | |
| SAE XW-16 viscosity grade | | | |
| FEI SUM | NR | NR | 2.8% min |
| FEI 2 | | | 1.3% min after 100 hours aging |
| SAE XW-20 viscosity grade | | | |
| FEI SUM | | | 2.6% min |
| FEI 2 | | | 1.2% min after 100 hours aging |
| SAE XW-30 viscosity grade | | | |
| FEI SUM | | | 1.9% min |
| FEI 2 | | | 0.9% min after 100 hours aging |
| SAE 10W-30 and all other viscosity grades not listed above | | | |
| FEI SUM | | | 1.5% min |
| FEI 2 | | | 0.6% min after 100 hours aging |
| ASTM D6709 (Sequence VIII) | | | |
| Bearing weight loss, mg | 26 (max) | 26 (max) | 26 (max) |

Bench Test and Measured Parameter^a

Aged oil low-temperature viscosity

| | | | |
|--|-------------------|-------------------|-------------------|
| ASTM D4684, (Sequence III GA), aged oil low-temperature viscosity | Pass | Pass ^d | Pass |
| Or | | | |
| ASTM D7528, (ROBO Test), aged oil low-temperature viscosity | Pass | Pass ^d | Pass |
| ASTM D7320, (Sequence III GB) phosphorus retention, % min | NR | NR | 79 |
| Or | | | |
| ASTM D8111, (Sequence III HB) phosphorus retention, % min | NR | NR | 81 |
| ASTM D6557 (Ball Rust Test), avg. gray value, min ^b | 100 | 100 | 100 |
| ASTM D5800, evaporation loss, 1 hour at 250°C, % max ^e | 15 | 15 | 15 |
| ASTM D6417, simulated distillation at 371°C, % max | 10 | 10 | 10 |
| ASTM D6795, EOFT, % flow reduction, max | 50 | 50 | 50 |
| ASTM D6794, EOWTT, % flow reduction, max | | | |
| with 0.6% H ₂ O | 50 | 50 | 50 |
| with 1.0% H ₂ O | 50 | 50 | 50 |
| with 2.0% H ₂ O | 50 | 50 | 50 |
| with 3.0% H ₂ O | 50 | 50 | 50 |
| ASTM D4951, phosphorus % mass, max ^f | 0.08 ^g | NR | 0.08 ^g |
| ASTM D4951, phosphorus % mass, min ^f | 0.06 ^g | 0.06 ^g | 0.06 ^g |
| ASTM D4951, or D2622, sulfur % mass, max ^f | | | |
| SAE 0W-16, 5W-16, 0W-20, 0W-30, 5W-20, and 5W-30 | 0.5 ^g | NR | 0.5 ^g |
| SAE 10W-30 | 0.6 ^g | NR | 0.6 ^g |
| All other viscosity grades | NR | NR | 0.6 ^g |
| ASTM D892 (Option A), foaming tendency | | | |
| Sequence I, mL, max, tendency/stability | 10/0 ^h | 10/0 ⁱ | 10/0 ^h |
| Sequence II, mL, max, tendency/stability | 50/0 ^h | 50/0 ⁱ | 50/0 ^h |
| Sequence III, mL, max, tendency/stability | 10/0 ^h | 10/0 ⁱ | 10/0 ^h |
| ASTM D6082 (Option A), high-temperature foaming mL, max, tendency/stability ^h | 100/0 | 100/0 | 100/0 |
| ASTM D6922, homogeneity and miscibility | j | j | j |
| ASTM D6709, (Sequence VIII) shear stability | k | k | k |
| ASTM D7097, TEOST MHT, high-temperature deposits, deposit wt, mg, max ^f | 35 | 45 | 35 |

| | | | |
|--|-----------------|-----------|---------------------|
| ASTM D5133, gelation index, max ^b | 12 ^l | NR | 12 ^l |
| ASTM D6335, TEOST 33C, high-temperature deposits, total deposit weight, mg, max | | | |
| SAE XW-16 | NR | NR | NR |
| SAE XW-20 | NR | NR | NR |
| All other viscosity grades | NR | NR | 30 |
| ASTM D7563, emulsion retention | NR | NR | no water separation |
| ASTM D7216 Annex A2, elastomer compatibility | Table G-6 | Table G-6 | Table G-6 |
| ASTM D4683, D4741, or D5481, High Temp./High Shear Viscosity @ 150°C, mPa·s, min | 2.3 | 2.6 | 2.3 |

Note: All oils must meet the requirements of the most recent edition of SAE J300; NR = Not required.

~~^aResource Conserving does not apply to SAE 0W-16 and 5W-16.~~

^aTests are per ASTM requirements.

^bIf CI-4, CJ-4, CK-4 and/or FA-4 categories precede the "S" category and there is no API Certification Mark, the Sequence VG (ASTM D6593), Ball Rust (ASTM D6557), and Gelation Index (ASTM D5133) tests are not required.

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

^dNot required for monograde and 15W, 20W, and 25W multigrade oils.

^eCalculated conversions specified in ASTM D5800 are allowed.

^fFor all viscosity grades: If CH-4, CI-4 and/or CJ-4 categories precede the "S" category and there is no API Certification Mark, the "S" category limits for phosphorus, sulfur, and the TEOST MHT do not apply. However, the CJ-4 limits for phosphorus and sulfur do apply for CJ-4 oils. This footnote cannot be applied if CK-4 or FA-4 is also claimed. Note that these "C" category oils have been formulated primarily for diesel engines and may not provide all of the performance requirements consistent with vehicle manufacturers' recommendations for gasoline-fueled engines.

^gThis is a non-critical specification as described in ASTM D3244.

^hAfter 1-minute settling period.

ⁱAfter 10-minute settling period.

^jShall remain homogenous and, when mixed with ASTM reference oils, shall remain miscible.

^kTen-hour stripped kinematic viscosity must remain in original SAE viscosity grade except XW-20 which must remain ≥ 5.6 mm²/s.

^lTo be evaluated from -5°C to temperature at which 40,000 cP is attained or -40°C, or 2 Celsius degrees below the appropriate MRV TP-1 temperature (defined by SAE J300), whichever occurs first.