

SPECIFIC LL-04

5W-40

Gasoline and Diesel oil for EURO IV engines

100% Synthetic

TYPE OF USE

Specifically designed for BMW and MINI cars fitted with EURO IV engines (M43CNG, M47/TU2, M57TU, M57TOP, M57TU2, M67TU...) that require "Mid SAPS" lubricants : low Sulphated Ashes (<0.8%), low Phosphorus and (< 0.08%), low Sulphur (< 0.3%).

- **For Diesel engines fitted with diesel particulate filter**, Specific LL-04 must be used whatever the country. Specific LL-04 is also suitable for use into diesel engines without diesel particulate filter.

- **For Gasoline engines**, Specific LL-04 is only recommended for use in European Union countries, Switzerland, Norway and Liechtenstein. In those countries, Specific LL-04 can be used where BMW LL-01, LL-01 FE or LL-98 is required except for M3 and M5, refer to BMW recommendation.

PERFORMANCES

| | |
|-----------|---------------------------------|
| STANDARDS | ACEA A3 / B4 / C3 - API SL / CF |
| APPROVALS | BMW Long Life-04 |

Engines compliant with EURO IV anti pollution regulation are fitted with sensitive systems for exhaust gas post treatment :

- Sulphur and Phosphorus inhibit catalytic convertors operation and can damage catalytic components : inefficient exhaust gas treatment.
- Sulphated Ashes clog diesel particulate filters : shorten regenerating cycle, higher fuel consumption and engine power loss.

BMW developed BMW LL-04 standard for "Mid SAPS" lubricants (low Sulphur, Phosphorus and Sulphated Ashes) compatible with post treatment systems. Those oils allow reaching extended drain intervals managed by computer on board.

RECOMMENDATION

Drain interval : refer to manufacturers' recommendations and tune to your own use.
Do not mix with lubricants not BMW LL-04 compliant.

PROPERTIES

| | | |
|----------------------------|-------------|---------------|
| Viscosity grade | SAE J 300 | 5W-40 |
| Density at 15°C (59°F) | ASTM D1298 | 0.851 |
| Viscosity at 100°C (212°F) | ASTM D445 | 13.9 mm²/s |
| Viscosity at 40°C (104°F) | ASTM D445 | 84.9 mm²/s |
| Viscosity index | ASTM D2270 | 167 |
| Pour point | ASTM D97 | -36°C / -33°F |
| Flash point | ASTM D92 | 215°C / 419°F |
| TBN | ASTM D 2896 | 7.4 mg KOH/g |

2.0 Engine oil grades / viscosity grades

BMW specifies different grades of engine oil, depending on the engine and vehicle model. Specifications or descriptions other than those given here, for example "high lubricity oil, fully synthetic" etc. bear no relevance to their suitability for use in engines of the BMW Group.

Longlife-04 oils

These have been developed to guarantee an optimum service life for the particulate filter in diesel engines. These oils are stipulated for all diesel engines with particulate filter, but may also be used in almost all other BMW engines. Like Longlife-01 and Longlife-01 FE oils, they satisfy currently BMW's most stringent quality requirements. Longlife-04 oils must not be used in BMW spark-ignition engines in countries outside Europe (EU plus Switzerland, Norway and Liechtenstein).

Longlife-01 oils

The quality of these oils is comparable to that of Longlife-04 and Longlife-01 FE oils and these oils can be used in most BMW engines.

Longlife-01 FE oils

Because of their particularly low viscosity, these oils are able to favourably influence fuel consumption. However, they are only to be used in engines that have been specially designed to run with such low-viscosity oils (spark-ignition engines with Valvetronic).

Longlife-98 oils

Satisfy specific requirements for extended oil change intervals that were introduced in 1998. Their quality is no longer adequate for the current range of spark-ignition and diesel engines.

Special oils:

With one exception, these are no longer listed, but may still be used for vehicles with oil change interval up to 15,000 km.

ACEA specifications

For older vehicles, oils may still be used that are not expressly listed but which satisfy the following specifications:

Spark-ignition engines: A2/B2, A3/B3 or A3/B4

Diesel engines: A3/B3 or A3/B4

Information concerning oils for initial running or running in:

No special running-in oils are used in BMW engines. For this reason, the oil specifications given also apply to filling or topping up oil in new, reconditioned or exchange engines before the 1st oil service.

Viscosity grades

Viscosity measures the oil's ability to flow. It is highly dependent on the temperature of the oil, i.e. the higher the temperature, the lower the viscosity. Likewise, the oil temperature is dependent on various factors, for example on the ambient temperature in which the vehicle is operated.

When the outside temperature is low, the oil must not be too viscous, so as to ensure that all the lubrication points are supplied quickly with oil when the engine is cold. When oil or engine temperatures are high, the oil must possess a certain minimum viscosity, so that an adequately thick lubricating film is built up.

Modern multigrade oils combine good low-temperature characteristics with adequate lubrication at high oil temperatures, preventing the need for a suitable viscosity grade to be selected and oil to be changed purely on a seasonal basis.

If engine oils complying with [Enclosure 3](#) are used, the following rules apply for the selection of a suitable viscosity grade:

BMW longlife oils:

BMW longlife oils, as specified for all BMW vehicles since 1998, are tested by BMW to ensure that they can be used anywhere in the world, at any time of year, regardless of ambient temperature. If BMW longlife oils are used, it is therefore not necessary to keep a check on the viscosity grade. The exception is the M47TÜ2: for SAE 5W-X oils there is a lower temperature limit of -20°C. Cold-starting difficulties may occur at lower temperatures. In countries where outside temperatures frequently fall below -20°C, we therefore recommend 0W instead of 5W products. BMW Longlife oils are only available in the viscosity grades SAE 0W-30, SAE 0W-40, SAE 5W-30 and SAE 5W-40.

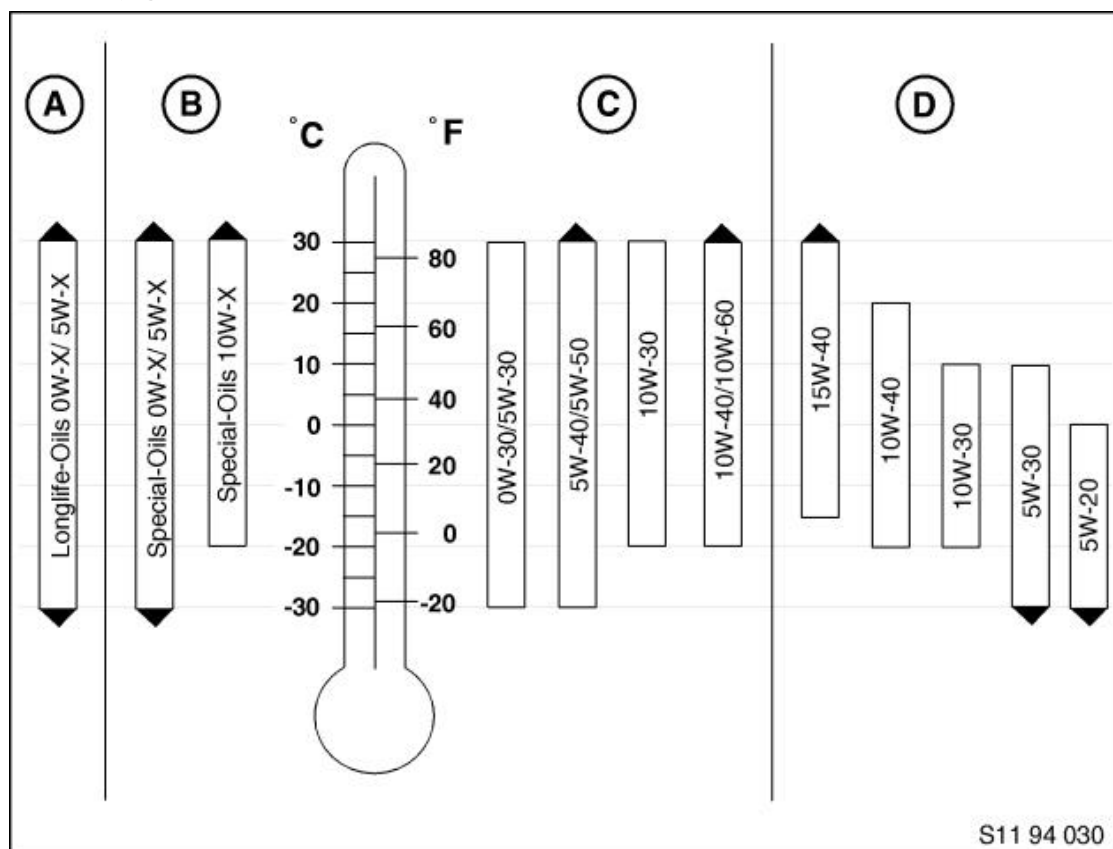
BMW special oils:

SAE 0W-X and SAE 5W-X oils (X can mean 30, 40, 50 or 60) can be used all year round anywhere in the world any ambient temperature. For SAE 10W-X oils there is a lower temperature limit of -20°C. Cold-starting difficulties may occur at lower temperatures.

ACEA specification:

The most suitable viscosity grade should be selected using the viscosity/temperature diagram. Here again, making the right choice will avoid the need for purely seasonal oil changes (e.g. SAE 15W-40 for Central Europe). The temperature limits shown in the diagram may be exceeded for a short time. If the upper temperature limit is exceeded, high engine speeds and loads over a prolonged period should be avoided. If the lower temperature limit is exceeded, difficulties may be experienced in starting a cold engine.

Viscosity grades



A = Longlife oil (as per [Enclosures 4, 5, 6](#))

B = Special oils (as per [Enclosure 8](#))

C = ACEA specifications for diesel engines (as per [Enclosure 11](#))

D = ACEA specifications for spark-ignition engines (as per [Enclosure 11](#))

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3.0 Specified engine oils for BMW Group engines

Specified engine oils for spark-ignition engines:

| Engine | Longlife -04 Please refer to Enclosure 4. | Longlife -01 Please refer to Enclosure 5. | Longlife -01 FE Please refer to Enclosure 6. | Longlife -98 Please refer to Enclosure 7. | Special oil Please refer to Enclosure 8. | SAE 10W-60 Please refer to Enclosure 9. | ACEA specification Please refer to Enclosure 11 |
|--------------------------|---|---|--|---|--|---|---|
| 4-cylinder: | | | | | | | |
| M43TU | X ⁽⁵⁾ | X | | X | | | |
| M43/CNG ⁴⁾ | X ⁽⁵⁾ | | | | | | |
| N42 | X ⁽⁵⁾ | X | X | | | | |
| N45 | X ⁽⁵⁾ | X | X | | | | |
| N46 | X ⁽⁵⁾ | X | X | | | | |
| N40 | X ⁽⁵⁾ | X | X | | | | |
| W10 | X ⁽⁵⁾ | X | | X | | | |
| W11 | X ⁽⁵⁾ | X | | | | | |
| 6-cylinder: | | | | | | | |
| N52 | X ⁽⁵⁾ | X | X | | | | |
| M52TU | X ⁽⁵⁾ | X | | X | | | |
| M54 | X ⁽⁵⁾ | X | | | | | |
| S54 | | | | | | X | |
| 8-cylinder: | | | | | | | |
| N62 | X ⁽⁵⁾ | X | X | | | | |
| M62 LEV | X ⁽⁵⁾ | X | | X | | | |
| S62 (E39) up to 02/00 | | | | | | X | |
| S62 (E39) from 03/00 | | X | | X | | | |
| S62 (E52) | | X | | X | | | |
| 10-cylinder: | | | | | | | |
| S85 | | | | | | X | |
| 12-cylinder: | | | | | | | |
| M73 (E31) from 9/1997 | X ⁽⁵⁾ | X | | X | X | | |
| M73 (E38) 9/97-8/98 | X ⁽⁵⁾ | X | | X | X | | |

| | | | | | | | |
|--------|------------------|---|---|---|--|--|--|
| M73LEV | X ⁽⁵⁾ | X | | X | | | |
| N73 | X ⁽⁵⁾ | X | X | | | | |

Specified engine oils for diesel engines:

| Engine | Longlife -04 Please refer to Enclosure 4. | Longlife -01 Please refer to Enclosure 5. | Longlife -01 FE Please refer to Enclosure 6. | Longlife -98 Please refer to Enclosure 7. | Special oil Please refer to Enclosure 8. | SAE 10W-60 Please refer to Enclosure 9. | ACEA specification Please refer to Enclosure 11 |
|--------------------------------------|---|---|--|---|--|---|---|
| 4-cylinder: | | | | | | | |
| M41, M51 | X | X | | X | X | | |
| M47, M47TU | X | X | | X | X | | X |
| M47TU (from 03/03) | X | X | | | | | |
| M47/TU2 ²⁾ | X | | | | | | |
| W17D14 | X | X | | X | | | X |
| 6-cylinder: | | | | | | | |
| M57 | X | X | | X | X | | X |
| M57TU (from 09/02) | X | X | | | | | |
| M57TU (E60, E61 from 03/04) | X | X ³⁾ | | | | | |
| M57Top (from 09/04) | X | X ³⁾ | | | | | |
| M57TU2 (from 03/05) | X | | | | | | |
| 8-cylinder: | | | | | | | |
| M67 (E38) | X | X | | X | X | | X |
| M67 (E65) | X | X | | | | | |
| M67TU (from 03/05) | X | | | | | | |
| | | | | | | | |
| Other ¹⁾ | X | X | | X | X | | X |

1) "Others" includes all BMW engines/models which are not listed in the above table, for example M10, M20, M21, M30, M40, M41, M42, M43, M44, M50, M51, M52, M60, M62, M70, M73, S14, S38, S50, S50U, S52, S70, etc.

2) In countries where the outside temperature frequently falls below -20°C, we recommend the use of 0W instead of 5W products.

3) To increase the service life of the diesel particulate filter, Longlife-04 oils are recommended as soon as they are available.

4) Engine oil M610 may also be used so long as it is available. [Please refer to Enclosure 10.](#)

5) Longlife-04 oils are only approved for spark-ignition engines in Europe (EU plus Switzerland, Norway and Liechtenstein). They must not be used outside this area.

BMW recommends Castrol.

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