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## - Certificate / ProductInformation -

### RAVENOL Formel Extra SAE 20W-50

Art. 1113120

#### Description:

**RAVENOL Formel Extra SAE 20W-50** is a mineral multigrade engine oil for passenger car gasoline and diesel engines with and without turbocharging, and is also suitable for commercial vehicle engines. Designed to minimize friction and wear, the formulation ensures year round high lubricity throughout all operating conditions. Extended oil drain capability where recommended by the vehicle manufacturer.

#### Application Directions:

**RAVENOL Formel Extra SAE 20W-50** is suitable for both gasoline and diesel engines which require this grade of engine oil.

#### Quality Classification:

**RAVENOL Formel Extra SAE 20W-50** is tried and tested for aggregates specifying:

Specifications: API SF/CD, ACEA A2/B2

Recommendations: MB 227.1, MIL-L-46152 B, MIL-L-2104 D, CCMC G4

#### Technical Characteristics:

**RAVENOL Formel Extra SAE 20W-50** offers:

- Excellent protection against corrosion
- A very good shear stability
- A high oxidation stability
- An excellent viscosity-temperature behavior
- Optimum operation of hydraulic tappets (hydraulic valve adjustment)
- High levels of detergent and dispersant additives for cleaner engines
- Compatible with all types of sealing materials
- Very good cold starting properties
- Prevents the formation of adhesions, varnish, carbon deposits and sludge accumulation

#### Technical Values:

| Characteristics           | unit               | data        | test according to |
|---------------------------|--------------------|-------------|-------------------|
| <b>Colour</b>             |                    | light brown | visual            |
| <b>Density</b> at 20 °C   | kg/m <sup>3</sup>  | 886         | EN ISO 12185      |
| <b>Viscosity</b> at 40 °C | mm <sup>2</sup> /s | 148,5       | DIN 51 562        |
| at 100 °C                 | mm <sup>2</sup> /s | 17,5        | DIN 51 562        |
| <b>Viscosity index VI</b> |                    | 129         | DIN ISO 2909      |
| <b>Flash point (COC)</b>  | °C                 | 228         | DIN ISO 2592      |
| <b>Pour point</b>         | °C                 | - 24        | DIN ISO 3016      |
| <b>TBN</b>                | mg KOH/g           | 6,0-9,0     | DIN ISO 3771      |
| <b>Sulphated ash</b>      | % wt.              | ca. 1,0     | DIN 51 575        |

All indicated data are approximate values and are subject to the commercial fluctuations.

To the best of our knowledge all information reflects the current state of findings and our development. Subject to change. Any reference to DIN standards are solely for product description purposes and do not represent a guarantee. If problems occur please consult a technician.

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