



Revision date: 29-May-2018 Version: 6 Print date: 29-May-2018

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:

RAVENOL VMP SAE 5W-30

Article No.:

1111122

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture:

Lubricant

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Ravensberger Schmierstoffvertrieb GmbH

Jöllenbecker Str. 2

33824 Werther

D

Telephone: +49 5203 9719 0

Telefax: +49 5203 9719 40

E-mail: kontakt@ravenol.de

Website: www.ravenol.de

E-mail (competent person): technik@ravenol.de

1.4. Emergency telephone number

Abt. Technik (Produktsicherheit), 24h: +49 700 24 112 112 (Company ID: RAV) (outside USA/Canada)
 011 49 700 24 112 112 (Company ID: RAV) (inside USA/Canada), +49 5203 9719 0 (Mo-Do 7.30 Uhr -
 16.30 Uhr, Fr 7.30 Uhr - 13.15 Uhr) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment (Aquatic Chronic 3)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

* **2.2. Label elements**

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard components for labelling:

Phenol, dodecyl-, branched; diphenylamine; Dec-1-en, Trimere, hydrated

Hazard statements for environmental hazards

H412 Harmful to aquatic life with long lasting effects.

Supplemental Hazard information (EU)

EUH208 Contains molybdenum. May produce an allergic reaction.

Precautionary statements Prevention

P273 Avoid release to the environment.

Precautionary statements Disposal

P501 Dispose of contents/container to according to official regulations for disposal.

2.3. Other hazards

No data available



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SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CL P]	Concentration
CAS No.: 157707-86-3 EC No.: 500-393-3	Dec-1-en, Trimere, hydrated Asp. Tox. 1 H304	45 - 75 Wt %
CAS No.: 7439-98-7 EC No.: 231-107-2	molybdenum Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 3 H315-H317-H412	0 - 1 Wt %
CAS No.: 128-39-2 EC No.: 204-884-0	2,6-di-tert-butylphenol Skin Irrit. 2, Aquatic Chronic 1 Danger H315-H400-H410	0 - 1 Wt %
CAS No.: 122-39-4 EC No.: 204-539-4	diphenylamine Acute Tox. 3, Aquatic Acute 1, Aquatic Chronic 1 H301-H311-H331-H400-H410	0 - 1 Wt %
CAS No.: 121158-58-5 EC No.: 310-154-3 REACH No.: 01-2119513207-49	Phenol, dodecyl-, branched Repr. 2, Skin Irrit. 2, Eye Irrit. 2, Aquatic Acute 1, Aquatic Chronic 1 Warning H315-H319-H361-H400-H410	0 - 1 Wt %

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. Remove contaminated, saturated clothing. If unconscious place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

Provide fresh air. Consult a doctor immediately.

In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. Consult a doctor immediately.

After eye contact:

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion:

Rinse mouth thoroughly with water. Do NOT induce vomiting. Consult a doctor immediately.

Self-protection of the first aider:

Use personal protection equipment.

* 4.2. Most important symptoms and effects, both acute and delayed

No known symptoms to date.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Observe risk of aspiration if vomiting occurs.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Carbon dioxide (CO₂)
 Extinguishing powder
 alcohol resistant foam

Unsuitable extinguishing media:

Full water jet



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5.2. Special hazards arising from the substance or mixture

During heating or in case of fire, toxic gases is possible.

The formation of combustible vapours is possible at temperatures above: Flash point

Hazardous combustion products:

Carbon monoxide, Carbon dioxide (CO₂), Nitrogen oxides (NO_x),

During heating or in case of fire, toxic gases is possible.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus. Protective clothing.

5.4. Additional information

Do not inhale explosion and combustion gases. Move undamaged containers from immediate hazard area if it can be done safely. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

Use personal protection equipment. Special danger of slipping by leaking/spilling product. Remove persons to safety.

Protective equipment:

Wear protective gloves/protective clothing/eye protection/face protection.

6.1.2. For emergency responders

Personal protection equipment:

Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

For containment:

Suitable material for taking up: Sand, Kieselguhr, Universal binder, Chemical binding agents, containing acids

For cleaning up:

Remove from the water surface (e.g. skimming, sucking). Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Other information:

Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Disposal: see section 13

Personal protection equipment: see section 8

6.5. Additional information

Clear spills immediately. Use appropriate container to avoid environmental contamination.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work. Do not put any product-impregnated cleaning rags into your trouser pockets. Clear spills immediately.

Fire prevent measures:

No special fire protection measures are necessary.

Environmental precautions:

See section 8.



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Advices on general occupational hygiene

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place.

Requirements for storage rooms and vessels:

Suitable container/equipment material: Floors should be impervious, resistant to liquids and easy to clean. Shafts and sewers must be protected from entry of the product.

Keep/Store only in original container.

Hints on storage assembly:

not required

Storage class: 10 - Combustible liquids that cannot be assigned to any of the above storage classes

Further information on storage conditions:

Store in a cool dry place. Keep away from heat.

7.3. Specific end use(s)

Recommendation:

Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
DFG (DE)	diphenylamine CAS No.: 122-39-4	① 5 mg/m ³ ② 10 mg/m ³ ⑤ (einatembare Fraktion, kann über die Haut aufgenommen werden)

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
molybdenum CAS No.: 7439-98-7	11.7 mg/m ³	① DNEL worker ② DNEL long-term inhalative (systemic)
zinc O,O',O',O'-tetrakis(1,3-dimethylbutyl) bis(phosphorodithioate) CAS No.: 2215-35-2	8.6 mg/m ³	① DNEL worker ② DNEL long-term inhalative (systemic)
2,6-di-tert-butylphenol CAS No.: 128-39-2	70.61 mg/m ³	① DNEL worker ② DNEL long-term inhalative (systemic)

8.2. Exposure controls

8.2.1. Appropriate engineering controls

See section 7. No additional measures necessary.

8.2.2. Personal protection equipment

Eye/face protection:

During transfer: Eye glasses with side protection



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Skin protection:

Hand protection
 Suitable material: NBR (Nitrile rubber), PVC (Polyvinyl chloride)
 Thickness of the glove material: >= 0,4 mm
 Breakthrough time (maximum wearing time) 480 min
 Breakthrough times and swelling properties of the material must be taken into consideration.
 The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Suitable protective clothing: Protective clothing:

Respiratory protection:

Usually no personal respiratory protection necessary. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Filter type A

8.2.3. Environmental exposure controls

See section 7. No additional measures necessary.

8.3. Additional information

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid

Colour: brown

Odour: characteristic

Safety relevant basis data

parameter		at °C	Method	Remark
pH	<i>not determined</i>			
Melting point	<i>not determined</i>			
Freezing point	<i>not determined</i>			
Initial boiling point and boiling range	<i>not determined</i>			
Decomposition temperature (°C):	<i>not determined</i>			
Flash point	238 °C			
Evaporation rate	<i>not determined</i>			
Ignition temperature in °C	<i>not determined</i>			
Upper/lower flammability or explosive limits	<i>not determined</i>			
Vapour pressure	<i>not determined</i>			
Vapour density	<i>not determined</i>			
Relative density	849 kg/m ³	20 °C		
Bulk density	<i>not determined</i>			
Water solubility	The study does not need to be conducted because the substance is known to be insoluble in water.			
Partition coefficient: n-octanol/water	<i>not determined</i>			
Dynamic viscosity	<i>not determined</i>			
Kinematic viscosity	71.9 mm ² /s	40 °C		

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No known hazardous reactions. Risk of explosion if heated under confinement.

10.2. Chemical stability

The mixture is chemically stable under recommended conditions of storage, use and temperature.



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10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

To avoid thermal decomposition do not overheat.

10.5. Incompatible materials

Materials to avoid: Acid, Reducing agent

10.6. Hazardous decomposition products

Hazardous combustion products: Carbon dioxide, Carbon monoxide, Nitrogen oxides (NOx)

SECTION 11: Toxicological information

* **11.1. Information on toxicological effects**

CAS No.	Substance name	Toxicological information
122-39-4	diphenylamine	LD ₅₀ oral: 1,120 mg/kg

Acute oral toxicity:

ATEmix calculated: no classification

Acute dermal toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

No irritant effect.

Serious eye damage/irritation:

No irritant effect.

Respiratory or skin sensitisation:

May cause sensitization by skin contact. Contains molybdenum. May produce an allergic reaction.

Germ cell mutagenicity:

No indications of human germ cell mutagenicity exist.

Carcinogenicity:

No indication of human carcinogenicity.

Reproductive toxicity:

No indications of human reproductive toxicity exist.

STOT-single exposure:

Based on available data, the classification criteria are not met.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Observe risk of aspiration if vomiting occurs.

SECTION 12: Ecological information

12.1. Toxicity

CAS No.	Substance name	Toxicological information
122-39-4	diphenylamine	LC ₅₀ : 3.79 mg/l 4 d EC ₅₀ : 1.16 mg/l 2 d EC ₅₀ : 2.17 mg/l 3 d LC ₅₀ : 2.2 mg/l 2 d EC ₅₀ : 0.31 mg/l 2 d (Wasserfloh) EC ₅₀ : 1.51 mg/l 3 d (Grünalgen)

Aquatic toxicity:

Harmful to aquatic life with long lasting effects.

Additional ecotoxicological information:

Do not allow uncontrolled discharge of product into the environment.

12.2. Persistence and degradability

Additional information:

The product has not been tested.



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12.3. Bioaccumulative potential

CAS No.	Substance name	Log K _{OC}	Bioconcentration factor (BCF)
122-39-4	diphenylamine	3.4	

Accumulation / Evaluation:

The product has not been tested.

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

CAS No.	Substance name	Results of PBT and vPvB assessment
157707-86-3	Dec-1-en, Trimere, hydrated	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
7439-98-7	molybdenum	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
128-39-2	2,6-di-tert-butylphenol	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
122-39-4	diphenylamine	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.
121158-58-5	Phenol, dodecyl-, branched	The substance in the mixture does not meet the PBT/vPvB criteria according to REACH, annex XIII.

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of waste according to applicable legislation.

Waste treatment options

Appropriate disposal / Product:

Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package:

Non-contaminated packages may be recycled.

13.2. Additional information

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

No dangerous good in sense of these transport regulations.

14.1. UN-No.

not relevant

14.2. UN proper shipping name

not relevant

14.3. Transport hazard class(es)

not relevant

14.4. Packing group

not relevant

14.5. Environmental hazards

not relevant

14.6. Special precautions for user

not relevant



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14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

SECTION 15: Regulatory information

* **15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

15.1.1. EU legislation

No data available

15.1.2. National regulations

[DE] National regulations

Störfallverordnung

for substances contained in the product:

E1 Hazardous to the aquatic environment in Category Acute 1 or Chronic 1

E2 Hazardous to the aquatic environment in Category Chronic 2

Technische Anleitung Luft (TA-Luft)

Remark:

To follow: 5.2.5.

Water hazard class (WGK)

WGK:

2 - deutlich wassergefährdend

Description:

hazardous to water (WGK 2)

Source:

Self-classification (mixture; calculation rule).

Technische Regeln für Gefahrstoffe

TRGS 510

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

Berufsgenossenschaftliche Vorschriften (BGV)

Berufsgenossenschaftliche Informationen (BGI) 868

Berufsgenossenschaftliche Regeln (BGR) 189, 190, 192, 195

Other regulations, restrictions and prohibition regulations

Altöl-Verordnung (AltöIV)

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

15.3. Additional information

No data available

SECTION 16: Other information

* **16.1. Indication of changes**

2.2.	Label elements
4.2.	Most important symptoms and effects, both acute and delayed
11.1.	Information on toxicological effects
15.1.	Safety, health and environmental regulations/legislation specific for the substance or mixture
16.1.	Indication of changes

16.2. Abbreviations and acronyms

See overview table at www.euphrac.eu

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).



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16.3. Key literature references and sources for data

67/548/EEC - Dangerous Substances Directive
 1999/45/EEC - Dangerous Preparations Directive
 EC 1907/2006 - REACH Regulation
 1272/2008 EC - Regulation on classification, labeling and packaging of substances and mixtures, and amending Directives 67/548/EEC and 1999/45/EC and Regulation (EC) No 1907/2006
 Regulation (EC) No 1907/2006 (REACH), Annex II
 European Chemicals Agency (ECHA), C & L classification and labeling inventory
 European Chemicals Agency (ECHA), ECHA CHEM Registered substances
 OECD The Global Portal to Information on Chemical Substances (ChemPortal)
 Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA): GESTIS substance database and International limit values for chemical substances
 Federal Environment Agency, Section IV 2.4: Documentation and Information Centre substances hazardous to water Rigoletto (catalog substances hazardous to water)

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Classification according to Regulation (EC) No 1272/2008 [CLP]:

Hazard classes and hazard categories	Hazard statements	Classification procedure
Hazardous to the aquatic environment (<i>Aquatic Chronic 3</i>)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

16.6. Training advice

No data available

16.7. Additional information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

* Data changed compared with the previous version



RAVENOL VMP SAE 5W-30



ART.-NR. 1111122

1 L | 1111122-001
4 L | 1111122-004
5 L | 1111122-005
8 L | 1111122-008
10 L | 1111122-010
20 L | 1111122-020
20 L | 1111122-B20
60 L | 1111122-060
60 L | 1111122-D60
208 L | 1111122-208
208 L | 1111122-D28
1000 L | 1111122-700

VISKOSITÄT 5W-30

SPEZIFIKATIONEN API SN IACEA C3

HERSTELLUNGSART VOLLSYNTHETISCH

FREIGABE MB-FREIGABE 229.51 | PORSCHE C30 | VW 504 00 | VW 507 00 | BMW LONGLIFE-04

EMPFEHLUNGEN BMW/MINI 83 21 0 398 508 | AUDI MOTORSPORT V31 748 026 | AUDI/VOLKSWAGEN G 052 195 M6 | AUDI/VOLKSWAGEN G 052 195 M4 | AUDI/VOLKSWAGEN G 052 195 M2 | MB 229.31 | FIAT 9.55535-S1 | BMW 83 21 0 398 507 | MERCEDES BENZ 000 989 89 01 10 | CHRYSLER MS-11106 | MB 000 989 89 01 10

RAVENOL VMP SAE 5W-30 ist ein PAO (Polyalphaolefin) basiertes, vollsynthetisches Motorenöl mit spezieller USVO® und bewährter CleanSynto® Technologie für PKW Motoren (Benzin und Diesel) mit und ohne Turboaufladung und Direkteinspritzer. Durch die USVO® Technologie erzielen wir eine extrem hohe Viskositätsstabilität. Wir vermeiden die Nachteile von polymeren Viskositätsverbesserern und nutzen gleichzeitig deren Vorteile. Dadurch verbessern wir den Motorschutz, die Leistung, optimieren die Motorsauberkeit und verlängern die Ölwechselintervalle. Die USVO® Technologie ermöglicht es, dass das Produkt während des gesamten Wechselintervalls keine Scherverluste aufweist und dabei extrem oxidationsstabil ist. Diese einzigartige Technologie hilft die zu schmierenden Motorenteile schneller mit Öl zu versorgen, minimiert dadurch die Reibung und hält gleichzeitig den Motor sauber und effizient.

RAVENOL VMP SAE 5W-30 basiert auf Zusätzen mit reduziertem Aschegehalt, die für den Einsatz in modernen PKW-Dieselmotoren sowie für PKW-Benzinmotoren mit optimalen Kaltstarteigenschaften, niedrigem Ölverbrauch sowie verringertem Schadstoffausstoß konzipiert sind. Verlängert die Lebensdauer von Dieselpartikelfilter DPF und 3-Wege Katalysator TWC. Entwickelt zur Kraftstoffeinsparung in Euro VI, Euro V und EURO IV Motoren mit normalen und verlängerten Ölwechselintervallen (bis 50.000 km oder 2 Jahre möglich).

RAVENOL VMP SAE 5W-30 erreicht durch seine Formulierung mit speziellen Grundölen einen hohen Viskositätsindex. Das exzellente Kaltstartverhalten sorgt für eine optimale Schmiersicherheit in der Kaltlaufphase.

RAVENOL VMP SAE 5W-30 sorgt für eine Minimierung von Reibung, Verschleiß und Kraftstoffverbrauch und hat exzellente Kaltstarteigenschaften. Verlängerte Ölwechselintervalle gemäß Herstellervorschrift.

Anwendungshinweis

RAVENOL VMP SAE 5W-30 ist ein universelles kraftstoffsparendes, speziell zusammengestelltes Motorenöl für moderne Benzin- und PKW-Dieselmotoren mit und ohne Turbolader in PKW und Transportern mit verlängerten Ölwechselintervallen. Verlängert die Lebensdauer des Partikelfilters. Durch die spezielle Formulierung ist **RAVENOL VMP SAE 5W-30** hervorragend zur Anwendung für mehrere der neuesten OEM Anforderungen geeignet.



Eigenschaften

RAVENOL VMP SAE 5W-30 bietet:

- Kraftstoffersparnis im Teil- und Vollastbetrieb
- MID SAPS = Reduzierte Sulfatasche, Phosphor und Schwefel
- Hervorragender Verschleißschutz und hoher Viskositätsindex sichern auch unter Hochgeschwindigkeits-Fahrbedingungen die Langlebigkeit des Motors.
- Hervorragende Kaltstarteigenschaften auch bei niedrigen Temperaturen.
- Einen sicheren Schmierfilm bei hohen Betriebstemperaturen.
- Geringe Verdampfungsneigung, dadurch niedriger Ölverbrauch.
- Keine ölbedingten Ablagerungen in Brennräumen, in der Kolbenringzone und an Ventilen.
- Neutralität gegenüber Dichtungsmaterialien.
- Verlängerte Ölwechselintervalle schützen natürliche Ressourcen.

Eigenschaften	Einheit	Daten	Prüfung nach
Dichte bei 20°C	kg/m ³	853,0	EN ISO 12185
Aussehen/Farbe		gelbbraun	visuell
Viskosität bei 100°C	mm ² /s	12,1	DIN 51 562
Viskosität bei 40°C	mm ² /s	69,7	DIN 51 562
Viskositätsindex VI		172	DIN ISO 2909
HTHS bei 150°C	mPa*s	3,7	ASTM D5481
CCS Viskosität bei -30°C	mPa*s	4740	ASTM D5293
Low Temp. Pumping viscosity (MRV) bei -35°C	mPa*s	13.200	ASTM D4684
Pourpoint	°C	-60	DIN ISO 3016
Noack Verdampfungstest	% M/M	7,2	ASTM D5800/b
Flammpunkt	°C	238	DIN ISO 2592
TBN	mg KOH/g	7,1	ASTM D2896
Sulfatasche	%m	0,7	DIN 51 575



Alle Angaben entsprechen nach bestem Wissen dem derzeitigen Stand der Erkenntnisse und unserer Entwicklung. Änderungen bleiben vorbehalten. Alle Bezugnahme auf DIN-Normen dienen nur der Warenbeschreibung und stellen keine Garantie dar. Bei vorliegenden Problemfällen technische Beratung anfordern.

Stand: 20. Mai 2021