

RENOLIN MR MC

Universal lubricating and hydraulic fluids based on special hydrotreated base oils (MC base oils)

Description

The products of the RENOLIN MR MC series are universally applicable, zinc-containing lubricating and hydraulic fluids based on special semi-synthetic base oils with a high, shear-stable viscosity index (VI > 150). They have detergent / dispersant properties. The base oils which are used for the RENOLIN MR MC series are special, hydrotreated fluids, so-called MC base oils which are generated in a special hydrocracking process. These special base oils offer a higher performance compared to conventional lubricating and hydraulic fluids.

Application

The RENOLIN MR MC-products are universal lubricating and hydraulic fluids, they have a multifunctional character. These high-quality products have proven their superiority in long-term use in various applications in mobile and stationary hydraulic units. The RENOLIN MR MC-products can also be used as spindle, running-in, test and corrosion protection oils.

RENOLIN MR MC oils are recommended for machinery operating under unfavourable atmospheric conditions such as high humidity, and for machine tools especially if water-miscible metal-working fluids are used.

The RENOLIN MR MC-products have excellent viscosity-temperature behaviour. They can be used even if great changes of the ambient temperature are encountered. The high, shear-stable viscosity index generates multigrade characteristics, a reduction of different ISO viscosity classes can be possible.

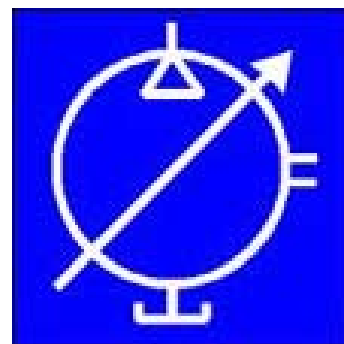
Advantages/Benefits

- Semi-synthetic, hydrotreated base oils (MC base oils)
- Excellent oxidation stability and aging resistance
- Excellent air release, low foaming
- Excellent corrosion protection
- Very good wear protection, good AW-/EP properties
- High, shear-stable viscosity index (high VI)– multigrade characteristics (which allows rationalisation of different ISO VG classes)
- Wide operating temperature range
- Extended service intervals possible
- Multifunctional use, universally applicable
- Excellent dispersant and detergent properties (high DD content)
- Avoid electrostatic phenomena

Specifications

RENOLIN MR MC oils meet and in many cases exceed the requirements:

- ISO 11158: HV
- DIN 51 524-3: HVLPD (except demulsifying power according to DIN 51 599)



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Health, Safety and Environment - information is provided for products in the relevant Safety Data Sheet. This provides guidance on potential hazards, precautions and first-aid measures, together with environmental effects and disposal of used products.

While the information and figures given here are typical of current production and conform to specification, minor variations may occur. No warranty expressed or implied is given concerning the accuracy of the information or the suitability of the products

Superior corrosion protection

The outstanding corrosion protection properties of the RENOLIN MR MC oils ensure that no corrosion on steel or non-ferrous metals arises, even in the presence of water. Therefore, we recommend RENOLIN MR MC oils as running-in and operating lubricants. If properly stored, the metal surfaces wetted with RENOLIN MR MC oil are reliably protected against corrosion.

For comparison:

Test method:	According to:	Unit	HLP 46/ HM 46	RENOLIN MR 46 MC
Corrosive effect on copper	DIN EN ISO 2160	Corr. coeff.	1-100 A 3	1-100 A 24
Corrosion protection on steel, procedures A and B	DIN ISO 7120	Corr. coeff.	0	0
Testing of corrosion protection oils for acid neutralization Hydrobromic acid immersion testing	DIN 51 357	Corr. coeff. / number of sheets	-	0/3
Sea water immersion test	DIN 51 538	Corr. coeff. / number of sheets	-	0/3
Testing in damp heat alternating climate	DIN 50 017	Cycles	-	8

Depending on the operating conditions (temperature, tank volume, oil circulating rate) the service intervals can be extended by the factor 2 to 3 if RENOLIN MR MC-products are used – compared to conventional HLP hydraulic fluids.

CHARACTERISTICS: RENOLIN MR MC

RENOLIN MR		22 MC	32 MC	46 MC	68 MC	
Characteristics	Unit					Test Method
ISO VG		22	32	46	68	DIN 51 519
Kinematic Viscosity						DIN EN ISO 3104
at -20°C	mm ² /s	671	1515	2773	5725	
at 0°C	mm ² /s	140	240	385	624	
at 40°C	mm ² /s	22	32	46	68	
at 100°C	mm ² /s	4.9	6.4	8.3	11.3	
Viscosity Index	-	153	152	154	157	DIN ISO 2909
Density at 15°C	kg/m ³	855	858	865	870	DIN 51 757
Colour	-	1.0	1.5	1.5	1.5	DIN ISO 2049
Flashpoint	°C	200	220	234	253	DIN ISO 2592
Pour point	°C	-54	-48	-48	-42	DIN ISO 3016
Neutralization number	mgKOH/g	0.5	0.5	0.5	0.5	DIN 51 558-1
Air release at 50°C	Minutes	3	4	7	9	DIN 51 381
Foaming, Seq. I-III						ASTM D 892
24°C	ml	10/0	10/0	10/0	10/0	
93.5°C	ml	30/0	30/0	30/0	30/0	
24°C after 93.5°C	ml	10/0	10/0	10/0	10/0	
Sludge-carrying capacity according to DBL 6571-4	mm	80	80	80	80	DBL 6571-4
VKA shear stability, four ball test: relative shear loss (viscosity reduction, V40 and V100) after 20 h	%	< 15	< 15	< 15	< 15	DIN 51 350-6
FZG mechanical gear test rig	failure load stage	11	11	11	11	DIN ISO 14635-1

WARNING: Never mix zinc-free hydraulic fluids with those containing zinc-based additives.