

## Description

The base oils used to manufacture this group of products have been carefully refined to obtain a high viscosity index and excellent resistance to oxidation. Its constituent additives, as well as enhancing these natural characteristics, provide this lubricant with exceptional anti-wear properties and temperature performance.

These oils are specially designed for hydraulic circuits subjected to sudden temperature changes in which oils are also required to have greater anti-wear properties. They are specifically suited to hydraulic circuits exposed to the elements or with low working temperatures, as well as equipment requiring viscosity variations that are significantly lower than in standard fluids, and hydraulic systems used at sea (watertight doors, capstans and windlasses, stabilisers, etc.). Excellent performance in hydraulic systems for all kinds of public works machinery.

## Properties

- High resistance to oxidation, ageing and sludge formation.
- Excellent water separation.
- Outstanding anti-wear properties.
- Very good anti-foaming qualities.
- Very high viscosity index.
- Effective protection of metals against corrosion.
- Compatible with the joints habitually used in hydraulic circuits.
- Great load-bearing capacity.

## Quality levels

In accordance with the product's viscosity grade, it complies with the following quality standards:

- |   |  |
|---|--|
| • DIN-51524 Part 3 HVLP                               | • AFNOR NF E 48-603 HV                         |
| • ISO 6743/4 HV                                       | • FILTERABILITY AFNOR (NF E 48-690 and 48-691) |
| • ISO 11158   | • Eaton Vickers I-286-S and M-2950-S           |
| • MAG IAS P-68 (ISO 32); P-69 (ISO-68); P-70 (ISO-46) |  |

A safety data sheet is available on request.

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Technical data sheet for Lubricants. Revision 8. October 2013

## Technical specifications

	UNIT	METHOD	VALUE				
ISO Viscosity Grade			<b>15</b>	<b>22</b>	<b>32</b>	<b>46</b>	<b>68</b>
Viscosity at 100 °C	cSt	ASTM D 445	4.0	4.9	6.2	8.2	11.3
Viscosity at 40 °C	cSt	ASTM D 445	15	22	32	46	68
Viscosity index		ASTM D 2270	145	150	150	150	150
Density at 15 °C	g/cm <sup>3</sup>	ASTM D 4052	0.859	0.864	0.868	0.871	0.879
Flash point	°C	ASTM D 92	195	205	205	210	230
Pour point	°C	ASTM D 97	-45	-39	-33	-33	-33
De-emulsification at 54 °C	Min	ASTM D 1401	<25	<25	<25	<30	<45
Rust resistance, A and B		ASTM D 665	Pass	Pass	Pass	Pass	Pass
Aeroemulsion at 50 °C	min	ASTM D 3427	<1	<2	<2	< 4	< 5
Copper corrosion 3 h at 100 °C		ASTM D 130	1b	1b	1b	1b	1b
TAN	mg KOH/g	ASTM D 664	0.5	0.5	0.38	0.38	0.38
Oxidation, acid number at 2000 hrs	mg KOH/g	ASTM D 943	2 max.	2 max.	2 max.	2 max.	2 max.
FZG, damage stage		DIN 51354	11	11	12	12	12

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