

### Description

These oils are specially designed for use in hydraulic circuits requiring lubricants with marked anti-wear properties. Manufactured from carefully selected bases with specific to notably enhance their properties.

They are specially suitable for hydraulic circuits and civil works machines equipped with any type of pump, particularly working under high pressures and, in general for all kinds of mechanisms requiring stable oils and in those in which the maximum anti-wear levels required by international standards must be attained and exceeded.

### Properties

- High resistance to oxidation and sludge formation.
- High deaeration capacity.
- High viscosity index.
- Very good anti-foam and anti-rust properties.
- Excellent water separation.
- Excellent filterability.
- Very good compatibility with joints and retainers.
- Maximum anti-wear level.
- Excellent load capacity.
- High thermal and hydrolytic stability.

### Quality levels, approvals and recommendations

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

- |   |   |   |
|---|---|---|
| • DIN-51524 Part 2 HLP                                    | • AFNOR NF E 48-603 HL, HM                            | • Bosch Rexroth RDE 90235 (ISO 32, 46 and 68) |
| • ISO 6743/4 HM   | • FILTERABILITY AFNOR (NF E 48-690 and 48-691)        | • Ortlinghaus Standard ON 9.2.19 (ISO 46)*    |
| • ISO 11158   | • MAG IAS P-68 (ISO 32); P-69 (ISO 68); P-70 (ISO 46) | • IBERCISA (ISO 32 and 46)*                   |
| • PARKER DENISON HF-0, HF-1 and HF-2 (ISO 32, 46 and 68)* | • Eaton Vickers I-286-S and M-2950-S                  | • THYSSENKRUPP (ISO 32, 46 and 68)*           |

\* Formal approval

A safety data sheet is available on request.

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Technical data sheet for Lubricants. Revision 11. July 2020.

### Technical specifications

	UNIT	METHOD	VALUE					
ISO Grade			<b>15</b>	<b>22</b>	<b>32</b>	<b>46</b>	<b>68</b>	<b>100</b>
Viscosity at 100 °C	cSt	ASTM D 445	3.4	4.4	5.4	6.8	8.5	11
Viscosity at 40 °C	cSt	ASTM D 445	15	22	32	46	68	100
Viscosity index		ASTM D 2270	113	107	100	98	98	97
Density at 15 °C	g/cm <sup>3</sup>	ASTM D 4052	0.861	0.865	0.870	0.880	0.880	0.885
Flash point	°C	ASTM D 92	198	210	226	231	246	264
Pour point	°C	ASTM D 97	-27	-27	-24	-24	-24	-21
Copper corrosion 3 h at 100 °C		ASTM D 130	1a	1a	1a	1a	1a	1a
De-emulsification at 54 °C	min	ASTM D 1401	< 20	< 20	<25	<30	<45	<30(82 °C)
Resistance to rust A and B		ASTM D 665	Pass	Pass	Pass	Pass	Pass	Pass
Aeroemulsion at 50 °C	min	ASTM D 3427	1	1	1,5	2,4	3,6	6
FZG, load step		DIN 51354	--	--	12	12	12	12
TAN	mg KOH/g	ASTM D 664	0.38	0.38	0.38	0.38	0.38	0.38
RPVOT	min	ASTM D 2272	400	400	400	400	400	400

The above mentioned characteristics are typical values and should not be considered product specifications.

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