

## Typical Specifications for Hydraulic fluids (ISO 32,46,68)

Performance Data	Method	ISO 32	ISO 46	ISO 68	Special Requirements
Specific Gravity @ 15.6°C	ASTM D-287	0.874	0.876	0.886	Report
API Gravity @ 15.6°C	ASTM D-287	30.4	30.0	28.2	Report
Viscosity @ 40°C	ASTM D-445	30.87	43.8	64.1	Note 1
Viscosity @ 100°C	ASTM D-445	6.9	9.67	12.5	Note 1
Viscosity @ -15°C, Brookfield	ASTM D-2983	Not complete	1100 cP	-----	Note 1
Viscosity @ -25°C, Brookfield	ASTM D-2983	1,200 cP	3,000 cP	-----	Note 1
Viscosity @ -30°C MRV TP1	ASTM D-4684	4,500 cP	8,000 cP	-----	10W= <60,000
Viscosity @ -35°C MRV TP1	ASTM D-4684	7,500 cP	-----	-----	5W= <60,000
Viscosity Index	ASTM D-2270	184	216	198	90 (min)
Pour Point	ASTM D-97	-40°C	-36°C	-30°C	Note 1
Flash Point (COC)	ASTM D-92	236°C	243°C	251°C	198°C (min)
Fire Point (COC)	ASTM D-92	260°C	268°C	274°C	218°C (min)
Hydrolytic Stability, Copper Wt. Loss (mg) Copper Appearance Water Layer	ASTM D-2619	0.0139 1B 0	0.0208 1B 0.3	0.0208 1A 0.9	0.2 Report 4
Foam Sequence I, II, III (10 min)	ASTM D-892	0 Foam	0 Foam	0 Foam	0 Foam
Rust Prevention Distilled Water Syn. Sea Water	ASTM D-665	Pass Pass	Pass Pass	Pass Pass	Pass Pass
Copper Corrosion Strip 3hr@100°C	ASTM D-130	1B	1B	1B	DIN51524 2(Max)
Rotary Bomb Oxidation (minutes)	ASTM D-2272	250	250	250	USS 120 (min)
Oxidation Stability (Pressure Differential Scanning Calorimeter)	ASTM D-5483 Modified	47.0 (165°C)	47.0 (165°C)	45.0 (165°C)	Note 2
Neutralization Number mg KOH/g	ASTM-D-974	< 0.4	< 0.4	< 0.4	1.5 (Max)
Swell of Synthetic NBR-1 Rubber, % (Avg.) Volume Change (%) Shore A Hardness Change (%)	DIN 53538, Part 1	6.0 -4	6.0 -4	6.0 -4	0 to 12 0 to -7
Filterability A-No Water (s) (Avg.) B-2% Water (s) (Avg.)	Denison T02100 HF-Requirement	113 187	268 271	335 449	600 (max) 2xA (max)
Demulsibility, ML Oil/Water/Emulsion	ASTM D-1401	40/ 40/ 0	40/ 40/ 0	39/ 40/ 1	40 (Max)
4-Ball Wear 1h, 167°F, 1200 RPM, 40 kg	ASTM D-4172	0.3 - 0.4	0.3 - 0.4	0.3 - 0.4	USS 127 0.5 (Max)
FZG Test	DIN 51354	12	12	12	US. Steel 10 (min)
<b>Biodegradation Classification</b>	ASTM-D-5864	Ultimate Pw1	Ultimate Pw1	Ultimate Pw1	Ultimate Pw1

Notes:

1. Viscosity Sufficient for Application
2. Not required