



PRODUCT DATA SHEET HY-GREEN SSE 46 HEES EAL HYDRAULIC FLUID

Hy-Green SSE 46 HEES EAL is a fully synthetic saturated environmentally acceptable ester hydraulic fluid, meeting the requirements of ISO 15380 hydraulic fluid performance level and OECD 301B environmental standard.

Hy-Green SSE 46 HEES is therefore a very high-performing, environmentally acceptable hydraulic fluid, suitable for working close to water due to its ultra-low aquatic toxicity and also on regulated land because it is classified as “readily biodegradable”.

Hy-Green SSE 46 HEES incorporates very carefully selected additives to impart shock-loading/ extreme pressure properties as well as corrosion protection for adverse, outdoor weather conditions.

Physical Properties

Parameter	Test Method	Units	Value
Kinematic Viscosity at 40°C	ASTM D445	mm ² /sec	46
Kinematic Viscosity at 100°C	ASTM D445	mm ² /sec	7.8
Viscosity Index	ASTM 2270	-	140
Density	ASTM 4052	kg/m ³	962
Pour Point	ASTM D97	°C	-45
Flash Point, open cup	ASTM D92	°C	270
Total Acid Number (TAN)	ASTM D 664	mg KOH/g	≤ 1
Total Base Number (TBN)	ASTM D 974	mg KOH/g	≤ 0.01
Hydroxyl Value	AOCS Cd 13-60	mg KOH/g	≤ 4
Iodine Value	DGF C-V11B	g I ₂ /100g	≤ 1
Water Content	ASTM D 4298	%	≤ 0.01

Performance results (to ISO 15380)

Test	Test Method	Measure	Value
FZG Gear Test A 8.3/90 (visual) – damage load stage	DIN 51354, part 2	Load stage pass	12
Vickers Vane Pump Type V 104-C	DIN 51389, part 2		
Weight loss ring (mg)	6		
Weight loss vane (mg)	5		
Biodegradability	OECD 301D	% 28 days	>60
Foaming Sequence 1/2/3	ASTM D 892	ml/ml	0/0/0
Air Release at 50°C	ASTM D3427	seconds	<60
Copper Corrosion (3h/100°C; 24h/100°C)	ASTM D130	rating	1a/1a – 1b
Steel Corrosion Procedure A (distilled water); Procedure B (synthetic sea water)	ASTM D665	rating	Pass/pass
RVPOT (150°C, H ₂ O, O ₂ , Copper catalyst) – lifetime	ASTM D 2272	minutes	Circa 1,100



Seal Compatibility Results

Seal Compatibility (ISO 6072) 100°C/168h	NBR1	HNBR	FKHM2	AU
Change of Shore A hardness (Shore A)	-10	-8	-2	0
Change of tensile strength (%)	-15	-5.9	-17.6	-21.9
Change of elongation at break (%)	-16.9	-6.6	8.0	3.8
Change of Volume (%)	14.9	14.9	1.2	-0.6

The above results are indicated, typical values which may vary slightly by production and should not be used as a product specification.

Product design standards of Hy-Green SSE 46 HEES EAL

- ◆ ISO 15380 HEES
- ◆ EU Ecolabel
- ◆ US EPA Vessel General Permit 2013 VGP
- ◆ Swedish standard SS 15 54 34 SP
- ◆ OECD 301D “Readily Biodegradable”

Benefits of using Hy-Green SSE 46 HEES EAL

- ◆ Excellent extreme pressure capability and shock-loading resistance
- ◆ Readily biodegradable and ultra-low toxicity to water for regulated areas and environmental care
- ◆ Highly resistant to thermal degradation, oxidation and varnish formation
- ◆ Extremely low pour point for all-year, cold climate operation
- ◆ Superb rust and corrosion protection for adverse climatic operating conditions
- ◆ First class hydraulic fluid performance, longer component and fluid life

Hy-Green SSE 46 HEES EAL is compatible with mineral and other synthetic lubricants but care is advised not to cross contaminate to enjoy the best possible performance from Hy-Green. For example, measures should be taken to ensure care with top-up fluid when necessary and flushing the system thoroughly before introducing Hy-Green, is advised.

Pack sizes: Hy-Green SSE 46 HEES EAL is available in 1,000 litre IBCs, 200 litre steel barrels, and 20 litre steel pails, avoiding plastic waste in the environment.