



PRODUCT DATA SHEET HY-GREEN SSE 320 WT EAL WIND TURBINE GEARBOX LUBRICANT

Hy-Green SSE 320 WT EAL is a fully synthetic saturated environmentally acceptable ester wind turbine gearbox fluid.

Hy-Green SSE 320 WT EAL offers the very highest performance whilst being an environmentally acceptable option for wind turbine gearboxes, whether over land or at sea, where the product's 'readily biodegradable' classification, ultra-low aquatic toxicity rating and fire resistant properties make it the responsible choice for risk-reduction in cases of leaks, spillages or fire risks.

Hy-Green SSE 320 WT EAL has been designed to be a 'fit and forget' / lifetime filling option with a working life span in excess of 12 years. The lubricant incorporates very carefully selected additives to impart shock-loading/ extreme pressure properties as well as corrosion protection for adverse weather conditions.

The polar nature of the saturated synthetic ester means that Hy-Green SSE 320 WT EAL bonds to metal surfaces and its very high film largely eliminates wear by keeping metal surfaces apart in heavy/ shock loading and stop-start conditions.

Hy-Green SSE 320 WT EAL has an exceptional low pour point to ensure excellent flow at cold temperatures such as experienced at height and in wind-chill conditions.

Physical Properties

Parameter	Test Method	Units	Value
Kinematic Viscosity at 40°C	ASTM D445	mm ² /sec	320
Kinematic Viscosity at 100°C	ASTM D445	mm ² /sec	32.2
Viscosity Index	ASTM 2270	-	140
Density	ASTM 4052	kg/m ³	1,022
Pour Point	ASTM D97	°C	<-45
Flash Point, open cup	ASTM D92	°C	280
Iodine Value	DGF C-V11B	g I ₂ /100g	≤ 1
Water Content	ASTM D 4298	%	≤ 0.01

Performance results

Test	Test Method	Measure	Value
Biodegradability	OECD 301D	% 28 days	>60 ("Readily biodegradable")
FZG Gear Test A 8.3/90 (visual) – damage load stage	DIN 51354, part 2	Load stage pass	>12
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
RV POT (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 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 320 WT EAL

- ◆ 12-year fluid life
- ◆ Reduced wear compared with mineral and synthetic mineral bases
- ◆ Cold weather (use down to -45 °C)
- ◆ EU Ecolabel
- ◆ OECD 301D “Readily Biodegradable”

Benefits of using Hy-Green SSE 320 WT EAL

- ◆ Excellent extreme pressure and shock-loading resistance
- ◆ Readily biodegradable and ultra-low toxicity to water for regulated areas and environmental care
- ◆ Highly resistant to thermal degradation, oxidation, varnish formation and chain-staining
- ◆ Extremely low pour point for all-year, cold climate operation in wind and at height
- ◆ Polar nature of the saturated, synthetic ester provides highly tenacious lubricant coating with outstanding film strength
- ◆ Superb rust and corrosion protection for adverse climatic operating conditions
- ◆ Top-class chain gear lubrication, retaining tooth profile and gear efficiency

Hy-Green SSE 320 WT 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.

It should be noted that esters are sometimes used to repair damage after mineral/synthetic mineral oil fill. The Hy-Green approach is to prevent this wear occurring in the first instance.

Pack sizes: Hy-Green SSE 320 WT EAL is available in 1,000 litre IBCs, 200 litre steel barrels, and 20 litre steel pails, avoiding plastic waste in the environment.