

BIOGEAR S

Overview: BioGear S is a biodegradable industrial gear oil formulated from synthetic ester base stocks. The combination of these high quality base oils and robust additive package allows for maximum equipment protection for extended drain intervals, while simultaneously providing protection for the environment. The additional lubricity of the fluid allows for efficient operation in demanding conditions. Available in ISO grades 220, 320 and 460.

Specifications, Approvals, Recommendations:

- Meets AGMA 9005-E02 Industrial Gear Specification
- USDA BioPreferred Program
- Classified as Environmentally Acceptable Lubricants (EAL's) as per the EPA's 2013 U.S. Vessel General Permit (VGP)

Physical Properties	S 220	S 320	S 460
ISO Grade	220	320	460
Specific Gravity, ASTM D1298	.87	.87	.87
Viscosity, ASTM D445 @40°C, cSt	220	320	460
Viscosity, ASTM D445 @100°C, cSt	27	36	46
Viscosity Index (VI), ASTM D2270	>160	>160	>160
Pour Point, ASTM D97, °F (°C)	-40 (-40)	-40 (-40)	-40 (-40)
Flash Point, ASTM D92, °F (°C)	>500 (260)	>515 (268)	>527 (275)
FZG Load Stage, DIN 51354	13+	13+	13+
Copper Corrosion, ASTM D4048	1B	1B	1B
Rust Test, ASTM D665, A & B	PASS	PASS	PASS
Water Separability, min. ASTM D1401	25	25	25
Environmental Stewardship: Meets EPA requirements to be classified as an EAL per the 2013 VGP			
Readily Biodegradable (meaning>60%) OECD 301B, %	PASS >60	PASS >60	PASS >60
Minimally Toxic	PASS	PASS	PASS
OECD 201 - Algae (EC 50), 72 hr, mg/L	>18,000 mg/L	>18,000 mg/L	>18,000 mg/L
OECD 202 - Daphnia (EC 50), 48 hr, mg/L	>11,000 mg/L	>11,000 mg/L	>11,000 mg/L
OECD 203 - Fish (LC 50), 96 hr, mg/L	>23,000 mg/L	>23,000 mg/L	>23,000 mg/L
Not Bioaccumulative* [*Calculated value as per EPA standard]	PASS	PASS	PASS
Additional Environmental Features and Characteristics			
Bio-based Content, ASTM D6866, %	>78	>78	>78

Applications & Industries: To be used in industrial gear applications across a wide range of industries. Use in equipment where a release into the environment is possible, where the authorities have mandated the usage of an EAL, or where a leak or spill could reach a waste stream.

