



Earthwise™ EAL Syn Hydraulic Oil (3332-3346-3368)

Long-Lasting, Nonfoaming Synthetic Oil Lets You Go Green Without Sacrificing Performance

LE's Earthwise™ lubricants are specifically formulated to be earth friendly while still meeting the rigorous demands of industrial applications. With these products, you can "go green" – and keep up with the latest environmental regulations – without having to sacrifice performance. Earthwise EAL Syn Hydraulic Oil is a certified Environmentally Acceptable Lubricant (EAL), recommended for use in applications on or near waterways. It meets the specifications required by the EPA's Vessel General Permit (VGP). It is readily biodegradable, exhibits minimal aquatic toxicity and will not accumulate in the cells of fish and other aquatic life forms. In addition, the base oil used in this full synthetic formulation comes from renewable resources.



A long-lasting, nonfoaming fluid designed to protect the life of hydraulic pumps and motors, it offers excellent protection against cold temperatures and resists oxidation in high temperatures. It also withstands extreme pressure, prevents rust and corrosion, and separates from water.

Beneficial Qualities

VGP Compliant

- Meets VGP standards for biodegradability, aquatic toxicity & bioaccumulation
- Formulated with base oil made from renewable resources
- Helps companies be good environmental stewards

Long-Lasting & High Quality

- Features full synthetic formula
- Exhibits extremely low volatility
- Maintains long oil life
- Extends oil changes
- Maintains performance in extreme cold

- Outperforms vegetable oil-based products in thermal, oxidative & hydrolytic stability tests

Wear & EP Resistant

- Protects metal components from scuffing, galling & other wear
- Withstands extreme pressure
- Minimizes leaks by protecting seals & hoses
- Minimizes equipment downtime
- Reduces need for replacement parts and labor

Water, Rust & Oxidation Resistant

- Separates from water
- Prevents rust & corrosion

- Provides superior oxidation resistance in high temps
 - Reduces sludge & varnish formation
 - Prevents plugged orifices & sticking valves
 - Stays in viscosity, even during temp fluctuations
- Provides smooth power flow
 - Eliminates fade or chatter by breaking up foam
 - Maintains system cleanliness

Available Grades

- ISO 32 (3332)
- ISO 46 (3346)
- ISO 68 (3368)



Earthwise™ EAL Syn Hydraulic Oil

	<u>3332</u>	<u>3346</u>	<u>3368</u>
Color	Amber	Amber	Amber
ISO VG	32	46	68
Relative Density @ 60°F/60°F, ASTM D1298	0.83	0.84	0.85
Viscosity @ 100°C, cSt, ASTM D445	6.04	8.05	10.95
Viscosity @ 40°C, cSt, ASTM D445	34.00	44.00	67.00
Viscosity Index ASTM D2270	124	157	154
Flash Point °C (°F), (COC), ASTM D92	239 (462)	234 (453)	244 (471)
Pour Point °C (°F), ASTM D97	-41 (-42)	-45 (-49)	-40 (-40)
Rust Test 4 hrs @ 60°C, Sea H2O, ASTM D665B	Pass	Pass	Pass
Copper Corrosion 3 hrs @ 100°C, ASTM D130	1B	1B	1B
Oxidation by RPVOT @ 150°C, minutes, ASTM D2272	>1,000	>1,000	>1,000
Four-Ball Wear @ 75°C, 1,200 rpm, 40 kgf, 60 minutes, mm wear, ASTM D4172	<0.40	<0.40	<0.40
Emulsion Characteristics @ 54°C, oil-water-emulsion/minutes, ASTM D1401	40-40-0/15	40-40-0/15	40-40-0/15
Foaming Characteristics @ 24°C/93.5°C/24°C, 3 sequences, ml of foam/time to break, ASTM D892	0/0	0/0	0/0
Air Release 9.0-90.0 cSt @ 40°C: 50°C, minutes, ASTM D3427	2.00	2.00	4.00
Simulated NOACK TGA Method % loss, ASTM D6375	<9.00	<8.00	<8.00
FZG Fail Stage, ASTM D5182	12	12	12
Biobased Content %, ASTM 6866	>50	>50	>50
Readily Biodegradable Content %, OECD 301B	>90	>90	>90
Inherently Biodegradable Content %, OECD 301B	≤5	≤5	≤5
Aquatic Toxicity mg/L, OECD 201 & 202	>100	>100	>100
Bioaccumulating Content %, OECD 305	0	0	0

Performance Requirements Met or Exceeded

- AIST 127
- DIN 51524-2
- Eaton 694 (formerly M-2950-S and I-865-S)
- Parker (formerly Denison) HF-0, HF-1, HF-2

- USDA BioPreferred
- US EPA VGP 2013

Recommendation

This product should not be used for fire resistant hydraulic fluid applications.

Typical Applications

- Hydraulic pumps and motors in marine & offshore applications