Clarity® Bio Elitesyn™ AW

Biodegradable high performance hydraulic fluids

(formerly Clarity Synthetic)

Product Description

Clarity® Bio EliteSyn™ AW oils are synthetic renewable, readily biodegradable, high performance hydraulic fluids. They are formulated with ashless technology to provide maximum protection in mobile and stationary hydraulic equipment in industrial and marine applications, including environmental sensitive areas. Clarity Bio EliteSyn AW oils meet the requirements of the EPA Vessel General Permit (VGP) for biodegradation, low toxicity, and low bioaccumulation, and are EU Ecolabel approved.

Customer benefits and product features

Customer benefits

- **Environmentally acceptable**
  Meets the requirements of the EPA Vessel General Permit (VGP) for biodegradation, low toxicity and low bioaccumulation to fish and invertebrates.
- **Zinc-free**
  Suitable for applications involving yellow metals found in axial piston pumps.
- **Excellent performance**
  Ashless formulation provides excellent protection against wear of hydraulic pumps, provides rust and corrosion protection, hydrolytic stability, water separability, foam inhibition, air release, filterability and seal compatibility.
- **Outstanding oil life**
  Outstanding ability of the synthetic base stock to withstand oxidation at high operating temperatures results in maximum service life for the oil relative to vegetable-based, readily biodegradable products.
- **Excellent low temperature pumpability**
  Specifically developed to ensure good low temperature fluidity for low temperature operations.

Product features

Clarity Bio EliteSyn AW oils are made with more than 85% renewable synthetic base stock. These high performance synthetic lubricants utilize sustainably sourced renewable plant-based feedstocks to produce hydrocarbon molecules that do not have any of the impurities found in traditional base oils derived from crude petroleum.

They are readily biodegradable, non-bioaccumulative, and minimally toxic. In the event of a spill, the product biodegrades by more than 60% within 28 days, minimizing the impact to the environment.

These oils are designed to the performance requirements of conventional antiwear hydraulic oils, while providing an additional benefit in case of leaks or incidental discharge to the environment and are approved for use by leading marine stern tube manufacturers. They give maximum protection in hydraulic equipment used in vessels and in both mobile and stationary hydraulic pumps in high-performance industrial applications.

Clarity Bio EliteSyn AW oils are formulated with synthetic base stock and an ashless, zinc-free additive system that provides exceptional oxidation stability, water separability, foam suppression, and protection against wear, rust and corrosion. The high VI synthetic base stock allows for operation over a wide temperature range and provides excellent low temperature pumpability**.**

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Applications

Clarity® Bio EliteSyn™ AW hydraulic oils are designed for excellent performance in applications involving:

ISO GRADE	32	46	68
Mobile and stationary hydraulic vane, piston and gear-type pumps	x	x	x
High performance industrial applications where pressures may exceed 5000 psi	x	x	x
Servo-valves using multi-metal components	x	x	x
Stern tube applications			x

Product approvals, performance and recommendations

CLARITY BIO ELITESYN AW	
AEGIR Marine	Approved
Danfoss/Eaton E-FDGN-TB002-E	Approved
EU Ecolabel BE/027/006	Approved
Kobelco Eagle (KEMEL)	Approved
Parker Hannifan (Dennison) HF-1, HF-6	Approved
ASTM D8324-21	Meets requirements

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Typical Test Data

CLARITY BIO ELITESYN AW	TEST METHOD	RESULTS		
ISO Grade		**32**	**46**	**68**
Product Code		**520387**	**520388**	**520389**
Air Release Time, 50.0 min	ASTM D3427	2.95	2.18	6.38
Appearance	SM 360	1	1	1
Copper Corrosion, 3 h, 100	ASTM D130	1b	1a	1a
Density, 15 kg/L	ASTM D4052	0.8223	0.8263	0.8262
Flash Point, COC °C	ASTM D92	235	252	237
FZG, Failure Load Stage, A/8.3/90	ASTM D5182	12	>12	>12
Kinematic Viscosity,				
mm^2/s @ 40°C	ASTM D445	6.5	8.15	11.85
mm^2/s @ 1000°C	ASTM D445	31.81	43.72	67.12
Rust Test, Proc. A, 24	ASTM D665	Pass	Pass	Pass
Rust Test, Proc. B, 24	ASTM D665	Pass	Pass	Pass
API Gravity		40.6	39.7	39.7
Viscosity Index	ASTM D2270	164	165	175
Flash Point, °C	ASTM D92	235	252	237
Pour Point, °C	ASTM D97	-46	-35	-41
Oxidation Stability	ASTM D943	>10,000	>10,000	>10,000
Biodegradability,% in 28 days	OECD 301B	>60	>60	>60
Algae, 72 h, EC-50, mg/L	OECD 201	>100	>100	>100
Daphnia magna 48 h, EC-50, mg/L	OECD 202	>100	>100	>100
Fathead minnow, 96 h, LC-50, mg/L	OECD 203	>100	>100	>100

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ENVIRONMENT, HEALTH, and SAFETY. Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions, and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit the Product Information Center.

This Product Data Sheet (PDS) was produced for the Africa, Middle East and Pakistan region in good faith from the best information available at the time of issue. The specific information included may not directly reflect the local market or conditions. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. For the most up-to-date, country-specific information, please contact your local customer service center.