Clarity® Elitesyn™ AW

Hydraulic oil

Product Description

Clarity® EliteSyn™ AW oils are premium high performance ashless anti-wear hydraulic fluids designed to meet the stringent demands of modern OEM designs, where increased performance is required. They are engineered to provide maximum protection and help improve productivity and efficiency in both mobile and stationary hydraulic equipment applications. These are high viscosity index fluids that provide a wide operating temperature range.

Customer benefits and product features

Customer benefits

- **Hydraulic system efficiency**
  High performance formula helps to improve hydraulic response time. It also contributes to an increase in operating temperature range and can improve production, as well as offering potential for lower energy costs.

- **Premium performance**
  Ashless formulation meets or exceeds major vane, piston and gear pump manufacturer requirements offering excellent protection of hydraulic systems against wear, rust and corrosion along with exceptional hydrolytic stability, water separability, and filterability for smooth equipment operation.

- **Exceptional oxidation and thermal stability**
  Good thermal stability helps to minimize varnish and sludge formation, to maintain product viscosity and contribute to longer oil life.

- **Excellent air release and foam control**
  Designed to ensure low air content in hydraulic fluid for improved equipment responsiveness.

- **Wide operating temperature range**
  Minimum change in viscosity over wide operating temperatures due to high viscosity index. Multi-viscosity performance reduces the need to change viscosity grades for seasonal changes.

- **Excellent low temperature pumpability**
  Specifically developed to ensure good low temperature fluidity in low temperature operations, with operating temperatures as low as -40°C (-40°F) for ISO 32 grade, and -30°C (-22°F) for ISO 46 and 68 grades.

- **Low toxicity**
  Zinc-free formula is inherently biodegradable[1] and has very low acute aquatic toxicity to both fish and invertebrates based on water accommodated fraction tests, aiding safer disposal in conventional recycling programs.

Product features

- Clarity EliteSyn AW oils are designed to give maximum protection to both mobile and stationary hydraulic pumps in high performance industrial applications as well as in environmentally sensitive areas.

- Clarity EliteSyn AW oils are formulated with synthetic base stock and an ashless, zinc-free additive system that helps provide exceptional oxidation stability, water separability, foam suppression, and protection against wear, rust and corrosion.

- Clarity EliteSyn AW oils are formulated with high viscosity index to offer improved hydraulic response time and increased operating temperature range, while resisting shear viscosity loss.

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Applications

Clarity EliteSyn AW oils are designed to meet the stringent demands of modern OEM designs, where increased performance of the hydraulic oil is required. They have demonstrated excellent performance in hydraulic systems using vane-, piston-, and gear-type pumps in mobile and stationary equipment. They are designed to provide protection in high performance hydraulic applications where pressures may exceed 5000 psi. These oils are recommended for use in plastic injection molding where OEMs require a fluid meeting DIN 51524 or equivalent industry performance standards. They are also suitable for use in lightly loaded reciprocating compressors.

Clarity EliteSyn AW oils are compatible with seal materials commonly found in most hydraulic systems, including nitrile and flouro elastomers (NBR and FKM). For low temperature startups, care must be taken to ensure that the hydraulic oil flows freely into the pump and no cavitation occurs. Otherwise, subjecting a pump to cavitation will cause damage to critical components. Careful attention to the oil's viscosity at low temperature is the key to ensuring adequate flow and preventing cavitation.

Please consult with the original equipment manufacturers (OEMs) of your equipment to determine the maximum viscosity allowed during startup under no load conditions.

The recommended maximum viscosity under load conditions for hydraulic oil as specified by most pump OEMs is 860 cSt. For cold starts under no-load conditions, the startup viscosity can be much higher than 860 cSt. No-load running conditions should be applied until the equipment has warmed up to the maximum startup viscosity under load as recommended by the OEM, and full load operation can then be applied when the oil viscosity falls below this recommended viscosity under load.

[1] Inherently biodegradable by OECD 301D testing and guidelines in EPA 800-R-11-002, November 2011 evaluations for a similar product. Product is not considered readily biodegradable. Clarity Bio EliteSyn AW should be used if a readily biodegradable EAL fluid is required.

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Product approvals, performance and recommendations

Developed independently by Chevron to comply with the following performance standards and specifications:

CLARITY ELITESYN® AW	ISO 32	ISO 46	ISO 68
Eaton E-FDGN-TB002-E	Approved	Approved	Approved
Parker Hannifan (Denison) HF-0, HF-1, HF-2	Approved	Approved	Approved
AIST (US Steel) 126, 127	Meets requirements	Meets requirements	Meets requirements
ASTM D6158-HV	Meets requirements	Meets requirements	Meets requirements
Chevron ISOCLEAN Certified Lubricant	Meets requirements	Meets requirements	Meets requirements
DIN 51524/3 HVLP	Meets requirements	Meets requirements	Meets requirements
Fives Cincinnati P-68	Meets requirements	-	-
Fives Cincinnati P-69	-	-	Meets requirements
Fives Cincinnati P-70	-	Meets requirements	-
ISO 11158-HV	Meets requirements	Meets requirements	Meets requirements
JCMA JCMAS HK	Meets requirements	Meets requirements	-
KraussMaffei Injection Moulding	-	Meets requirements	-
SAE MS1004-HM	Meets requirements	Meets requirements	Meets requirements
Standardization Admin of PRC GB 11118.1 L-H	Meets requirements	Meets requirements	Meets requirements

Consult OEM representatives for independent verification, updates and recommendations.

Product maintenance and handling

Refer to the service manual of the equipment to ensure that the minimum fluid viscosity requirements are met at the highest operating temperature. Please consult with your equipment manufacturer if equipment is operating outside normal operation conditions.

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Typical Test Data

CLARITY ELITESYN® AW	TEST METHOD	RESULTS		
ISO Grade		**32**	**46**	**68**
Product Code		**804650**	**804651**	**804652**
Density @ 15 kg/L	ASTM D4052	0.8455	0.8475	0.8472
Air Release Time, 50.0 min	ASTM D3427	1.1	1.9	5.2
Acid Number mg KOH/g	ASTM D664	0.1	0.16	0.09
Kinematic Viscosity,				
mm^2/s @ 40°C	ASTM D445	33	46.3	68
mm^2/s @ 1000°C	ASTM D445	7.1	9.15	11.5
BOBV Kinematic Viscosity,				
mm^2/s @ 40°C	ASTM D445	22.5	29.9	47.3
Viscosity Index	ASTM D2270	191	184	164
Brookfield Viscosity, -20 cP	ASTM D2983	1200	1920	3270
Copper Corrosion 3h, 150	ASTM D130	1a	1a	1a
Flash Point, COC °C	ASTM D92	216	234	246
Rust Test, Proc. A, 24	ASTM D665	Pass	Pass	Pass
FZG load stage. A/8 3/90	DIN 51354	12	>12	>12
Acute Aquatic Toxicity (LC-50)	OECD 203	Pass	Pass	Pass

0425

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.

Chevron company product