



Clarity Elitesyn AW

High performance environmentally sensitive hydraulic oils

(Replaces Clarity Synthetic Hydraulic Oil AW)

Product description

Clarity EliteSyn™ AW is a range of premium high viscosity index (VI) ashless, zinc-free, anti-wear hydraulic oils, designed to provide excellent protection, performance, and efficiency in both mobile and stationary hydraulic equipment in industrial applications, as well as in environmentally sensitive areas, meeting and exceeding major vane, piston, and gear pump manufacturer requirements.

Clarity EliteSyn AW is engineered with a high viscosity index to improve hydraulic response time and increase operating temperature range while resisting shear viscosity loss. In laboratory testing, it achieved a 12% hydraulic pump efficiency improvement when compared to a typical monograde fluid.

Clarity EliteSyn AW is formulated with premium synthetic base oils and high performance ashless, zinc-free additive technology, offering excellent oxidation stability, water separability, foam suppression, and protection against wear, rust and corrosion. It is designed to be suitable for applications where a zinc-free hydraulic oil is required to help minimise environmental impact.

Clarity EliteSyn AW replaces Clarity Synthetic Hydraulic Oil AW 32, 46, 68.

Product highlights

- **Promotes performance across broad temperature ranges.**
- **Helps minimise varnish and sludge for longer oil life.**
- **Formulated to help prevent corrosive wear, helping optimise productivity and uptime.**
- **Offers up to 12% efficiency improvement in lab tests.**
- **Inherently biodegradable¹ formulation offers lower environmental impact and improved recycling.**

Selected specification standards include:

ASTM	DIN
Eaton	Fives Cincinati ^a
GB	Hitachi/John Deere Construction
ISO	JCMAS
NSF	Parker Hannifin (Dennison)
SS (Swedish Standard)	

Customer benefits

- High viscosity index helps maintain a high operating temperature window to provide year-round performance.
- Good thermal stability helps to minimise varnish and sludge formation, to maintain product viscosity and longer oil life.
- Effective hydrolytic stability helps prevent corrosive wear to help optimise productivity and equipment uptime.
- In laboratory efficiency testing, Clarity Elitesyn AW provided up to 12% efficiency improvement on hydraulic pump efficiency when compared to a typical monograde hydraulic oil (lower VI product with VI<105).
- Specifically developed to ensure good low temperature fluidity for low temperature operations as low as -40°C for ISO 32 grade, and -30°C for ISO 46 and 68 grades.
- The zinc-free, ashless formulation is inherently biodegradable¹ and exhibits very low acute aquatic toxicity to fish and invertebrates based on water accommodated fraction tests, aiding safer disposal in conventional recycling programs.

Applications

Clarity EliteSyn AW oils are designed for high-performance hydraulic systems, meeting stringent OEM requirements. They perform well in vane, piston, and gear pumps, and are suitable for applications with pressures over 5000 psi, including plastic injection molding and lightly loaded reciprocating compressors. These oils are compatible with common seal materials like nitrile and fluoro elastomers.

For low-temperature startups, it's crucial to ensure the oil flows freely to prevent pump cavitation. The oil's viscosity at low temperatures must be monitored to avoid damage. OEM guidelines should be followed for maximum viscosity during startup and under load conditions, with a recommended maximum viscosity of 860 cSt under load. Equipment should be warmed up under no-load conditions until the oil viscosity is within the recommended range for full load operation. Always refer to the equipment's service manual and consult the OEM for specific requirements.

Clarity 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

Clarity Elitesyn AW is designed for environmentally sensitive applications, including:

- Marine
- Agriculture
- Forestry
- Mining
- Construction

Clarity Elitesyn AW is highly recommended for high pressure systems:

- Injection moulding
- Mobile equipment

Please contact the equipment manufacturer (OEM) if equipment is operating outside normal operation conditions.

Approvals, performance and suitable for use

Approvals and performance			
ISO Grade	32	46	68
Parker Hannifin (Dennison) HF-0, HF-1, HF-2	A	A	A
Eaton E-FDGN-TB002-E (SPECIFICATION FOR TOP TIER MINERAL BASED ANTI-WEAR HYDRAULIC FLUIDS (ISO 10 – 150)	A	A	A
Fives Cincinnati ^a (formerly MAG Cincinnati, Cincinnati Machine, Cincinnati Milacron)	M P-68	M P-70	M P-69
ASTM D6158 HM, HV	M	M	M
DIN 51524/2 HLP, DIN 51524/3 HVLP	M	M	M
ISO 11158 HM, HV	M	M	M
GB 11118.1 L-HM High Pressure	M	M	M
NSF H2 ^b	A	A	A
Hitachi/John Deere Construction JCMAS HK VG 32, 46	M	M	
JCMAS P041	M	M	
SS 155434-Type M	M	M	M

A: Approved for

M: Performance: Meets or exceeds requirements

^a Obsolete specification

^b Clarity Elitesyn AW (ISO 32, 46, 68) are registered by NSF and are acceptable as lubricants where there is no possibility of food contact (H2) in and around food processing areas. The NSF Nonfood Compounds Registration Program is a continuation of the USDA product approval and listing program, which is based on meeting regulatory requirements of appropriate use, ingredient review and labeling verification.

Product maintenance and handling

Clarity Elitesyn AW is not compatible with zinc/calcium containing fluids, and OEM recommended lubricant change-out procedures including drain and flush requirements need to be adhered to.

Compatibility testing should be conducted if Clarity EliteSyn AW is used to top up an existing system.

Standard recommendation is to always drain and flush the system.

Clarity EliteSyn AW is fully compatible with Clarity AW, Clarity Synthetic Hydraulic oil AW, Clarity Hydraulic Oil AW.

Do not use in use in high pressure systems in the vicinity of flames, sparks, and hot surfaces. Use only in well ventilated areas. Keep container closed.

Avoid any spillage of used and unused product to the environment.

Product residue and package/container should be disposed of in dedicated collection points.

Typical test data				
Test	Test Methods	Results		
Viscosity Grade		32	46	68
Typical Shelf Life: 60 months from date of filling indicated on the product label.				
Appearance	Visual	Bright & Clear	Bright & Clear	Bright & Clear
Color	ASTM D1500	1	1	1
Density at 15°C, kg/l	ASTM D4052	0.8455	0.8475	0.8472
Kinematic viscosity at 100°C, mm ² /s	ASTM D445	7.10	9.15	11.5
Kinematic viscosity at 40°C, mm ² /s	ASTM D445	33.01	46.27	68.04
Kinematic viscosity at 0°C, mm ² /s	ASTM D445	220.5	356	633.6
Kinematic viscosity at -20°C, mm ² /s	ASTM D445	1155	2110	4928
Viscosity Index	ASTM D2270	191	184	164
Pour point, °C	ASTM D97	-52	-47	-44
Flash point COC, °C	ASTM D92	216	234	246
Copper Corrosion 3hr at 100°C	ASTM D130	1A	1A	1A
Foam Seq I, foam tendency/stability ml	ASTM D892	10/0	0/0	10/0
Foam Seq II, foam tendency/stability ml	ASTM D892	20/0	20/0	10/0
Foam Seq III, foam tendency/stability ml	ASTM D892	10/0	0/0	0/0
Water separation, oil/water/emulsion, min @ 54°C (minutes to <3ml)	ASTM D1401	40/37/3(5)	40/40/0(25)	40/37/3(20)
Air release at 50°C, min	ISO 9120	1.1	1.88	5.22
Tapered Roller bearing, % viscosity loss, 40°C	CEC L-45-A-99	6	9	3
Rust Test, Proc A & B	ASTM D665	Pass	Pass	Pass
Oxidation Stability, TOST hours to 2.0 mg KOH/g, TAN	ASTM D943	>10000	>10000	>10000
FZG (A/8.3/90), fail Load Stage	DIN 51354	12	>12	>12
Acute Aquatic Toxicity (LC-50)	OECD 203	Pass	Pass	Pass

The typical test data set out above does not constitute a specification. It is indicative only and can be affected by allowable production tolerances. Chevron may modify this test data. Modified data will supersede all previous data, so please ensure you refer to the latest version of this Product Data Sheet (PDS).

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.

Disclaimer: Data provided in this Product Data Sheet (PDS) is based on standard tests under laboratory conditions and is indicative only. This product should not be used for any purpose other than those expressly set out in this PDS. The user has sole responsibility for verifying that this product is suitable for the user's intended application. Neither Chevron nor its subsidiaries (i) make any warranty or representation as to the accuracy or completeness of this PDS; and/or (ii) accept liability for any loss or damage suffered as a result of the use of this product other than in accordance with the terms of this PDS.

Always confirm that the product selected is consistent with the original equipment manufacturer's recommendation for the equipment operating conditions and customer's maintenance practices.

When disposing of used product, take care to protect the environment and follow local legislation.

Safety Data Sheets (SDS's) are available for all Chevron products. If you require a SDS or any further information regarding a Chevron product, please contact your local sales office or see <http://europe.chevronlubricants.com>.

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