Clarity® Hydraulic Oil AW

High performance environmentally sensitive hydraulic oil

Product description

Clarity Hydraulic Oil AW is a range of high performance hydraulic oils designed with premium base oil technology in combination with an advanced zinc-free ashless additive system. They offer robust oxidation stability, water separation, foam suppression with dependable wear, rust and corrosion protection to both mobile and stationary hydraulic vane, piston and gear-type pumps operating in industrial applications and in environmentally sensitive areas.

With a non-vegetable base oil and zinc-free formulation, the Clarity Hydraulic Oil AW range offers dependable long-life protection, with longer TOST (ASTM D943) oxidation stability test performance than conventional zinc-based formulations. It is well suited to applications where yellow metals are present in hydraulic systems.

Clarity Hydraulic Oil AW 100 is a shear-stable high VI hydraulic oil designed to improve equipment efficiency and increase the operating temperature range of this lubricant grade.

Customer benefits

- High performance ashless formulation designed to meet or exceed major vane, piston and gear pump manufacturers' requirements for viscosity, rust and corrosion protection, hydrolytic stability, water separability, foam inhibition, and filterability
- Offers robust oxidation stability and longer service life than conventional zinc-based anti-wear or vegetable oil-based hydraulic oils
- Reliable anti-wear formulation helps optimise wear protection in high efficiency, high speed, high temperature and high output equipment

Product highlights

- **Designed to meet or exceed OEM requirements**
- **Offers longer life than conventional hydraulic oils**
- **Helps optimise wear protection**
- **Designed for low toxicity and biodegradability[1]**
- **Formulated for yellow metal protection**

Selected specification standards include:

ASTM	Blohm+Voss
Denison	DIN
Eaton-Vickers	ISO
MAG Cincinnati	NSF
Wärtsilä-Japan	

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.

- Designed for low toxicity, biodegradable[1] performance and has very low acute aquatic toxicity to both fish and invertebrates based on tests of water accommodated fractions. Ashless formulation is suitable for conventional recycling programmes
- Zinc-free, ashless design helps protect in applications where yellow metals are present in piston pumps

Applications

- Clarity Hydraulic Oil AW are designed to give reliable protection in mobile and stationary hydraulic vane, piston, and gear-type pumps and in high performance industrial applications as well as in environmentally sensitive areas. Many hydraulic systems are required to operate in environmentally sensitive areas where leaks or spills of hydraulic fluid may result in contamination of the soil or nearby waterways. Unlike Clarity Hydraulic Oil AW, conventional anti-wear hydraulic oils are formulated with metal-containing performance additives which can persist in the environment
- Clarity Hydraulic Oil AW are designed to meet or exceed the performance requirements of conventional anti-wear hydraulic oils, especially in severe, high-output applications such as axial piston pumps. The anti-wear performance of these oils makes them especially suited for high performance industrial applications utilising axial piston pumps where pressures may exceed 5000 psi
- Clarity Hydraulic Oil AW have offered good performance in applications involving servo-valves using multi-metal components

Approvals, performance and recommendations

Approvals

Clarity Hydraulic Oil AW 100 is approved for Stern tube applications by:

- Blohm+Voss
- Wärtsilä-Japan

Performance

- DIN 51524-2 HLP
- DIN 51524-3 HVLP (ISO 100)
- ASTM D6158, HM (ISO 32, 46, 68), HV (ISO 100)
- ISO 11158 HM (ISO 32,46,68), L-HV (ISO 100)
- Denison HF-0, HF-2 testing requirements of T5D (ISO 32, 46, 68)
- MAG Cincinnati, Cincinnati Machine P-68(ISO 32), P-70(ISO 46), P-69(ISO 68)
- Eaton-Vickers for use in M-2950-S (mobile) and I-286-S (stationary) hydraulic systems. Passes Eaton-Vickers 35VQ25 pump test. (ISO 32, 46, 68)

Recommendations

- Clarity Hydraulic Oils AW (ISO 32, 46, 68) are registered by NSF and are acceptable as a lubricant where there is no possibility of food contact (H2) in and around food processing areas

Product maintenance and handling

Clarity Hydraulic Oil 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.

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

Typical test data

Test	Test Methods	Results			
Viscosity Grade		**32**	**46**	**68**	**100**
Shelf Life: 60 months from date of filling indicated on the product label.					
Appearance	Visual	Br&Cl	Br&Cl	Br&Cl	Br&Cl
Colour	ISO 2049	L0.5	L0.5	L0.5	L0.5
Kinematic Viscosity at 40°C, mm²/s	ASTM D445	32	46	68	100
Kinematic Viscosity at 100°C, mm²/s	ASTM D445	5.6	6.8	8.5	13.8
VI	ASTM D2270	104	101	102	145
Density at 15°C, kg/l	ASTM D1298	0.8618	0.8666	0.8698	0.8694
Flash Point, COC, °C	ASTM D92	222	224	224	266
Pour Point, °C	ASTM D5950	-33	-30	-30	-40
Copper Corrosion, 3h/150°C	ASTM D130	1B	1B	1B	1B
Brugger(wear) test, N/mm²	Brugger	—	19	—	—
Oxidation stability Hours to 2.0 mg KOH/g acid number, ASTM D943 (allowed to run beyond 10.000hrs)	ASTM D943	>18000	>18000	>18000	>5000
Rust Test , proc A	ASTM D665A	Pass	Pass	Pass	Pass

The information given in the typical data does not constitute a specification but is an indication based on current production and can be affected by allowable production tolerances. The right to make modifications is reserved. This supersedes all previous editions and information contained in them.

[1] As determined by OECD 301D (Closed Bottle Biodegradability Test), Chevron Clarity Hydraulic Oil AW was shown to be inherently biodegradable. This test is normally run for 28 days. After completing this test period, Chevron Clarity Hydraulic Oil AW was 38% degraded. Degradation of 20-59% after 28 days in OECD 301 D is evidence that a product is inherently biodegradable. Chevron Clarity Hydraulic Oil AW did not meet the criteria for readily biodegradable, which is degradation of > 60% after 28 days in OECD 301D.

Disclaimer Chevron accepts no liability for any loss or damage suffered as a result of using this product for any application other than applications specifically stated in any Product Data Sheet's.
Health, safety, storage and environmental Based on current available information, this product is not expected to produce adverse effects on health when used for the intended application and in accordance with the recommendations provided in the Material Safety Data Sheet (MSDS). MSDS's are available upon request through your local sales office, or via the Internet. This product should not be used for purposes other than its intended use. When disposing of used product, take care to protect the environment and follow local legislation.

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