



# Clarity<sup>®</sup> Synthetic Hydraulic Oils AW

## Synthetic Ashless Anti-Wear Hydraulic Fluid

Product Data Sheet

### Customer benefits

#### Premium performance

Ashless formulation provides excellent wear protection, rust and corrosion protection, hydrolytic stability, water separability, foam inhibition and filterability.

#### Long service life

Outstanding ability of the synthetic base stock to withstand oxidation at high operating temperatures results in maximum service life of the oil.

#### Low toxicity

Very low acute aquatic toxicity to both fish and invertebrates based on tests of water accommodated fractions. Ashless formulation facilitates conventional recycling programs

#### Excellent wear protection at start up

Minimum change in viscosity over wide operating temperatures due to high viscosity index. Multi-viscosity performance minimizes the need to change viscosity grades for seasonal changes

#### Hydraulic system efficiency

Very high viscosity index fluid improves hydraulic response time, increases operating temperature range and production, as well as the potential for lowering operating cost

#### Excellent low temperature pumpability

Specially developed to ensure good low temperature fluidity for low temperature operations to as low as -40oC for ISO 32 grades and -30oC for ISO 46 and 68 grades

#### Zinc-free/Ashless

Suited for applications involving yellow metals found in piston pumps.

### Applications

Clarity<sup>®</sup> Synthetic Hydraulic Oils AW are designed for use in mobile and stationary hydraulic vane-, piston-, and gear-type pumps.

The antiwear performance of Clarity<sup>®</sup> Synthetic Hydraulic Oil AW make them especially suited for high performance industrial applications utilizing axial piston pumps where pressure may exceed 5000 psi.

Clarity<sup>®</sup> Synthetic Hydraulic Oil AW are well suited for applications in environmentally sensitive areas. They have a viscosity index much higher than typical conventional antiwear hydraulic oils, provide excellent low temperature pumpability and better wear protection at high operating temperature. Clarity<sup>®</sup> Synthetic Hydraulic Oils AW are 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.

### Product features:

- Clarity<sup>®</sup> Synthetic Hydraulic Oils AW 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. They are formulated with high VI to improve hydraulic response time and increase operating temperature range. In laboratory efficiency testing, Clarity<sup>®</sup> Synthetic Hydraulic Oil AW provided up to 8% improvement in overall hydraulic pump efficiency when compared to a typical monograde hydraulic oil (lower VI product with VI<105).

- Clarity<sup>®</sup> Synthetic Hydraulic Oils AW are designed to meet or exceed the performance requirements of conventional antiwear hydraulic oils, especially in severe, high-output applications such as axial piston pumps, while providing an additional level of safety in case of leaks or incidental discharge to the environment.

- Clarity<sup>®</sup> Synthetic Hydraulic Oils AW are designed to give maximum protection in mobile and stationary hydraulic industrial applications as well as in environmentally sensitive areas.

## Typical key properties

CLARITY® SYNTHETIC HYDRAULIC OILS AW			
ISO Grade	32	46	68
Product Code	520365	520366	520367
Flash Point, °C	228	230	218
Pour Point, °C	-48	-42	-45
Viscosity (typical),			
mm <sup>2</sup> /s @ 40°C	32.5	46.5	68.0
mm <sup>2</sup> /s @ 100°C	7.0	9.3	11.4
Viscosity Index	186	186	162
Oxidation Stability-TOST ASTM D943, Hours to 2.0 mgKOH/g acid number	>10,000	>10,000	>10,000

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## Performance standards

Clarity® Synthetic Hydraulic Oils AW meet the requirements of:

- DIN 51524-3 (HVLV, 2006, Part 3)
- ISO 11158 L-HV
- ASTM D6158, HV
- Eaton Vickers 35VQ25A, M-2950-S, I-286-S
- Cincinnati Machine P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- Bosch-Rexroth former specification RE 90220-01
- Vestas 0000-2843 (ISO 32)
- Frank Mohn, Framo hydraulic cargo pumping (ISO 46)
- Arburg (ISO 46)
- Krauss Maffei Kunststofftechnik (ISO 46)

## 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: [www.chevronlubricants.com](http://www.chevronlubricants.com).

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

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**Chevron Lubricants**  
– Asia Pacific



## CLARITY® SYNTHETIC HYDRAULIC OILS AW

### Service considerations

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 (OEM) 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 860cSt. 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 when the oil viscosity falls below this recommended viscosity under load.

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 the equipment is operating outside normal operation conditions.

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