



BIO-SYNTHETIC HYDRO HVI SERIES

DESCRIPTION

BIO-SYNTHETIC HYDRO HVI series are premium quality, high performance hydraulic oils developed to meet the demand for environmentally acceptable hydraulic fluids. The products are blended in biodegradable synthetic polyol esters GROUP VI base fluids and a highly specialized ashless non-zinc anti-wear, thermally stable multifunctional additive package which provides the following performance. A high-performance, carefully selected additive package provides excellent anti-wear and extreme pressure (EP) properties as well as good thermal stability and corrosion protection. Inherently strong oxidation resistance helps to prevent gumming and deposit formation even at high temperatures. Because of the high natural GROUP VI base fluid and low pour point, the viscosity-temperature behaviour allows for a very wide operating temperature range. Compared to vegetable oil based (HETG) products, HEES (Hydraulic Oil Environmental Synthetic Ester) fluids, such as the BIO-SYNTHETIC HYDRO HVI series will give an overall improved performance & in particular related to higher operating temperatures and better thermal and oxidation resistance. BIO-SYNTHETIC HYDRO HVI is environmentally accepted hydraulic fluids.

FEATURES	BENEFITS		
Readily biodegradable hydraulic oil Very low Water Endangering Class NGW (nicht wassergefährdend)	Reduces potential for environmental damage Lowers potential remediation and clean-up costs caused by spills or leakage Becomes an integral part of plant environmental programmes		
High viscosity index and low pour point	Allows a wide operating temperature range		
Excellent water demulsibility	Avoids deposit formation and filter plugging for enhanced equipment reliability		
Outstanding corrosion protection and multi metal compatibility	Reduces corrosion of internal system components Will not react with steel or copper alloys		
Excellent anti-wear/EP properties	Protects system components against wear and Scuffing Provides long equipment life		
Rapid air release properties	Optimum circulation efficiency and suitability for systems even with small sumps		
Good compatibility with seals and joints	Works well with same elastomers used with conventional mineral based oils		

SPECIFICATION OF BIO-SYNTHETIC HYDRO HVI (GROUP-6 BASE OIL)

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ISO Viscosity Grade	HVI 32	HVI 46	HVI 68
Colour	Light Yellow		
Type of Oil	Polyalphaolefin		
Specific Gravity @ 60	0.925	0.925	0.905
Viscosity cSt @ 40º C	32.7	46.7	68.7
Viscosity cSt @ 100º C	6.63	8.45	11.17
Viscosity Index,	189	176	162
Pour Point, ºC,	-54	-45	-39
Flash Point, ºC,	250	240	240
Copper Corrosion	1a	1a	1a
Biodegradability, CEC-L-33-A94	>60%	>60%	>60%

APPLICATIONS

- BIO-SYNTHETIC HYDRO HVI are specially recommended where there could be accidental fluid loss into the environment or where surface water contamination should be avoided. Application areas include industrial, forestry and marine and particularly in mobile equipment. This can include waste water treatment plants, reservoirs, waterways, parkland, tunnel drilling, forest machines, dredgers, river sluices and harvesting machines, etc. On ships, applications could include bow thrusters, propeller systems and deck machinery.
- 2. BIO-SYNTHETIC HYDRO HVI series are also suitable for use in the power and energy industry, particularly in wind turbine applications. There are some special handling procedures with the BIO-SYNTHETIC HYDRO HVI series.
- 3. BIO-SYNTHETIC HYDRO HVI series is fully miscible with mineral oil based hydraulic oils, its biodegradability will be reduced if the two product types are mixed. It is always recommended to test for miscibility. Residual quantities of mineral oil should be kept at a minimum. Furthermore, paint finishes should be on 2-part epoxy system. Metals such as zinc and tin should be avoided wherever possible. The cleaning effect of these fluids can dislodge large amounts of dirt, which can shorten filter life. Water content during use should be < 0, 1%. Any collected water should be drained.
- 4. BIO-SYNTHETIC HYDRO HVI for hydraulic, turbine and circulating systems, Drip Oil for vertical shaft driven deep well turbine pumps and other drip systems, Airline Oil for high and low pressure airline and pneumatic tool systems.

HEALTH AND SAFETY

- Depending on the contamination and/or degradation levels, small amounts of spilled or leaked BIO-SYNTHETIC HYDRO HVI fluid will not adversely affect ground water or the environment. For small spills on the ground uncontaminated product will be readily biodegraded by naturally occurring soil organisms when exposed to air. Nonetheless, spillage of BIO-SYNTHETIC HYDRO HVI Fluid should be handled similarly to currently accepted methods for conventional mineral oil spills.
- Acceptable methods of disposal include use as a fuel supplement, recycling and reclamation (that is,
 the same disposal practices available for conventional mineral oils). Since BIO-SYNTHETIC HYDRO
 HVI Fluid typically will not be a hazardous waste, additional disposal options may be available,
 including land farming or processing through sewage treatment facilities. If necessary, approvals are
 obtained from appropriate regulatory authorities.
- The flushing solution is not being biodegradable therefore; it should be disposed of in an environmentally safe manner. Follow procedures used for disposing of conventional mineral oils.

PROPER USE FOR HEALTH AND SAFETY

Based on available information, this product is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet (MSDS) are followed. MSDS's are available upon request through your sales contact office, or via the internet. This product should not be used for purposes other than its intended use. If disposing of used product, take care to protect the environment.

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