



### TO-4 HD FULLY SYNTHETIC

#### PRODUCT DESCRIPTION:

TO-4 HD is engineered for power shift transmissions, final drives, and wet brakes on heavy-duty off-highway equipment in earthmoving, mining, logging, road transport, and agricultural applications. It is blended from premium quality base oils and proven performance additives.

#### APPLICATION:

TO-4 HD specifically designed to meet the performance requirements of caterpillar TO-4, Komatsu power shift transmissions, ZF torque converter transmissions and Allison C-4 automatic transmission. It is also used for heavy duty manual transmissions, gear boxes, final drives and hydraulic systems used in off highway equipment. Recommended for industrial torque converters and hydraulic systems where such type of fluids is specified.

#### FEATURES & BENEFITS:

- Good compatibility with all common seals, O rings, packing materials and clutch materials that leads to reduced downtime.
- Good low temperature fluidity.
- Quick start up of equipment.
- Excellent oxidation resistance and thermal stability for long fluid life.
- Protects against sludge and varnish formation.
- Protects against wear.
- Protects against rust and corrosion
- High shear stability
- Foam resistance

#### PERFORMANCE LEVELS: Meets and Exceeds:

- Caterpillar TO-4
- Allison TES 439
- Komatsu KES 07.868.1
- Allison C-4
- ZF TE-ML-03C
- API GL-4

#### TYPICAL PROPERTIES:

PARAMETERS	TEST METHOD	UNIT	TO-4 HD			
			10W	30	50	60
Grade			10W	30	50	60
Kinematic Viscosity @ 104°F /40°C	ASTM D-7042	cSt	30.5	103	220	320
Kinematic Viscosity @ 212°F /100°C	ASTM D-7042	cSt	5.5	11.0	19.5	26.0
Viscosity Index	ASTM D-2270	-	117	90	101	103
SP. Gravity @15°C/ 60°F	ASTM D-4052	g/cm <sup>3</sup>	0.877	0.892	0.898	0.899
Flash Point (min)	ASTM D-92	°C	220	240	254	270
Pour Point (max)	ASTM D-97	°C	-36	-15	-15	-15

#### HEALTH & SAFETY, ENVIRONMENT:

Prolonged and repeated contact with oil may cause skin disorders. Avoid contact. Wash immediately with soap and water. Do not discharge used oil in to drains or the environment. Dispose to an authorized used oil collection point.

#### HEALTH & SAFETY:

This product is not likely to present any significant health or safety hazards when properly used in the recommended application and good standards of personal hygiene are maintained. Reference is made to the Safety Data Sheet (SDS) which is available on request via your local sales office.

#### PROTECT THE ENVIRONMENT:

Take used oil to an authorized collection point. Comply with local regulation. Do not discharge into drains, soil or water.

#### STORAGE:

We recommend to store all packages under cover. In case outside storage is unavoidable, drums should be laid horizontally to avoid the possible ingress of water and damage to drum markings. Products should never be stored above 60°C, exposed to hot sun or freezing conditions.

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