

## Puma HD Drive Train 10W, 30, 50

### Heavy Duty Transmission & Hydraulic Oil

Puma HD Drive Train oils are special lubricants suitable for use in Caterpillar, Komatsu and other heavy industrial machines. It is to be used for the lubrication of power shift, direct drive transmissions, final drives, differentials, winches, clutch plates, gears and bearings.

- ✓ Anti-wear Protection
- ✓ Oxidation Resistance
- ✓ Anti-foam Performance
- ✓ Frictional Performance

### Designed to Perform

#### Anti-wear Protection – Longer Equipment Life

Proven anti-wear additive packages provide greater resistance to sliding wear thus ensuring efficiency and long life of all moving parts of final drive and transmission systems.

#### Oxidation Resistance - Longer Oil Life

It has extremely good oil life and lubricant stability even when subjected to unusually high thermal stresses and chemical break down; this property minimises sludge and deposit formation. Maintenance costs are therefore reduced and the useful service life of the oil is extended, permitting continuous use at operating temperatures as high as 100°C.

#### Non-corrosiveness

Will not corrode materials employed for the construction of machinery and especially those used for gaskets and seals, as well as metals such as steel, cast iron, copper and bronze.

#### Anti-corrosion & Anti-rust Properties

These inhibit the oxidation of internal surfaces of industrial gear systems and therefore prevent operating difficulties and breakdown of the oil caused by metallic oxides that would otherwise form within the machinery.

#### Demulsibility – Component Life Extension

Prevents the formation of water in oil emulsions, which enters the system through leakage or condensation. Separates rapidly from water and thus ensure perfect lubrication even in applications where water contamination is possible. The fluids therefore maintain their lubricating power and anti-corrosive performance even under these circumstances.

#### Frictional Performance

Highly consistent and reliable friction performance when used with the advanced metallic and non-metallic materials found in modern systems. Minimal clutch slippage, smooth and quiet brake operation, and trouble-free transmission operation.

#### Compatibility & Miscibility

Puma HD Drive Train Oils are compatible with various seal materials to help prevent premature failure of seals and thus avoid leakage.

#### Puma HD Drive Train

Meets the requirements of the following specifications:

- > Caterpillar : TO2, TO-4
- > ALLISON C-4, TES-439
- > API : GL-4
- > KOMATSU KES 07.868.1
- > EATON M2950S, 1-280-S
- > ZF TE- ML 03C,07D,07F

### Typical Physical Characteristics

Property	Temp	Units	Test Methods	10W	SAE 30	SAE 50
Kinematic Viscosity	@ 40°C	cSt	ASTM D7279	45.05	88.8	181
Kinematic Viscosity	@ 100°C	cSt	ASTM D7279	7.17	10.9	17.65
Apparent Viscosity (CCS)	-	cP	D5293	4607	-	-
Viscosity Index	-	-	ASTM D2270	120	108	106
Flash Point (COC)	-	°C	ASTM D92	235	247	247
Pour Point	-	°C	ASTM D97	-42	-42	-30
Density	@ 20°C	g/ml	ASTM D4052	0.8598	0.8723	0.8940
Total Base No	-	mg KOH/g	D874	8.91	8.97	9.02
Sulphated Ash	-	%	D874	1.2	1.1	1.2

*These characteristics are typical of current product methods whilst future production will conform to Puma Lubricants specifications, variations in these physical characteristics may occur.*

### Health & Safety Environment

- > This product is unlikely to present any significant health and safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
- > Avoid contact with eyes and skin, use proper impervious gloves with used oil. After skin contact, wash immediately with soap and water. Guidance on health and safety is available on the appropriate Safety Data Sheet (SDS) which can be obtained from [sds.pumaenergy.com.au](https://sds.pumaenergy.com.au)

### Protect the Environment

- > Take used oil to an authorised collection point. Do not discharge used or new oil into drains, soil or water.

### Additional Information

- > Technical advice may be obtained from your Puma Energy Representative.