

# ATF HD

## ATF for large vehicles

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To reduce the burden on drivers and improving safety, heavy-duty vehicles such as routes and tour buses are being converted to AT, many of which are adopted by overseas AT manufacturer's transmissions. **ATF HD** is an ATF for large vehicles that meets the ATF specifications of overseas AT makers and satisfies their severe required performances. **ATF HD**, which is a well-balanced combination of high-performance synthetic base oil and carefully selected various additives, has superior performance in terms of viscosity characteristics, friction characteristics, oxidation stability and anti-wear performance required for ATF. It demonstrates sufficient performance even in harsh operating environments of heavy-duty vehicles.

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### ● Special Features

#### 1. Meets various overseas ATF specifications

**ATF HD** can be used for large AT vehicles that specify the following ATF specifications. **ATF HD** satisfies particularly strict performance requirements of AT makers.

- ZF TE-ML 04D,14A,14B,16L,20B,21L
- Voith H55.6335,6336
- MAN 339F,339Type V-1,339 Type Z-1,Z-2
- MB 236.6
- VOLVO 97340,97341
- Ford MERCON®V

#### 2. High Viscosity Index and Good Low-Temperature Flow Properties

**ATF HD** provides good flow properties at low temperatures and maintains a suitable viscosity at high temperatures, because it is blended with high-performance synthetic base oils and carefully selected viscosity index improvers.

#### 2. Excellent Oxidative Stability

**ATF HD** suppresses oil deterioration and prevents the occurrence of varnish and sludge, because it also contains carefully selected oxidation inhibitors in high-performance synthetic base oil that provide excellent oxidative stability.

#### 3. Superb Friction Characteristics

**ATF HD** demonstrates appropriate friction characteristics against wet clutches, brakes, etc. by

balancing the carefully selected additives including friction modifiers.

#### 4. Excellent in anti-wear performance and extreme pressure property

**ATF HD** prevents abrasion and seizure of each part of the transmission even when used for a long time, because it contains carefully selected anti-wear agent (extreme pressure agent)..

#### 5. Good Compatibility with Transmission Components

**ATF HD** has good compatibility with both the nonmetallic components of transmissions, such as seals, and the metallic components, such as washers and clutches. It does not soak into the components and it ensures that the fluid joints and transmissions function smoothly.

#### 6. Outstanding Performance in Other Areas

**ATF HD** also offers outstanding de-foaming, detergency, and other types of performance required for ATFs.

### ● Applications

For large vehicle automatic transmission.

### ● Containers

200-liter drums and 20-liter cans.

## ● Typical Properties of ATF HD

Color			Red
Density	(15°C)	g/cm <sup>3</sup>	0.853
Flash point	(COC)	°C	210
Pour point		°C	-55
Kinematic viscosity	(40°C)	mm <sup>2</sup> /s	35.46
	(100°C)	mm <sup>2</sup> /s	7.402
Viscosity index			182
Viscosity, Brookfield(-40°C)		mPa·s	9500
Acid number		mgKOH/g	1.74
Base number(HCl method)		mgKOH/g	1.93
Foaming	ml/ml	Seq. I	0/0
		Seq. II	20/0
		Seq. III	0/0
Copper strip corrosion (100°C,3h)			1

Note: The typical properties may be changed without notice.(December 2017)



## Handling Precautions

▼ Follow these precautions when handling this product.

<b>Composition :</b>	Base Oil, Additives
<b>Precautionary pictograms:</b>	
<b>Signal word:</b>	Warning
<b>Hazard Statement:</b>	May cause an allergic skin reaction Harmful to aquatic life Harmful to aquatic life with long lasting effects
<b>Precautionary Statements:</b> <b>Prevention</b>	<ul style="list-style-type: none"> <li>• Do not handle until all safety precautions have been read and understood.</li> <li>• Wear protective gloves/protective clothing/eye protection/face protection.</li> <li>• Do not allow the eyes to become exposed to the product. Do not swallow the product.</li> <li>• Avoid release to the environment.</li> <li>• Contaminated work clothing should not be allowed out of the workplace.</li> <li>• Avoid breathing dust/fume/gas/mist/vapours/spray.</li> <li>• Wash hands thoroughly after handling.</li> <li>• Do not eat, drink or smoke when using this product.</li> </ul>
<b>Response</b>	<ul style="list-style-type: none"> <li>• IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.</li> <li>• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</li> <li>• If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician.</li> <li>• IF ON SKIN: Wash with plenty of soap and water.</li> <li>• Take off contaminated clothing and wash before reuse.</li> <li>• If skin irritation or rash occurs: Get medical advice/attention.</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight.</li> <li>• Containers that have been opened must be tightly sealed.</li> </ul>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>• Dispose of contents/container in accordance with local/regional/national/international regulations.</li> <li>• If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.</li> </ul>