

# GEAR OIL GL-4

## High-Grade Automotive Gear Oil (GL-4)

**GEAR OIL GL-4** is a high-grade automotive gear oil made from highly refined base oil and top-performance extreme-pressure agents, metal anticorrosion agents, detergent-dispersants and other additives. It meets the API service classification grade GL-4.

### ● Special Features

#### 1. Outstanding Lubrication Performance

**GEAR OIL GL-4** is a gear oil that meets the API service classification grade GL-4. It provides outstanding lubrication performance in automotive transmissions and differential gears under a wide range of driving conditions, from low torque at high speeds to high torque at low speeds. It performs very well even in the tough lubrication conditions of hypoid gears.

When cars are driven for a long time on high-speed expressways, their gears are exposed to heavy loads. The additive blend of **GEAR OIL GL-4** has been optimized to provide superb lubrication even under such tough driving conditions. Sulfur-phosphorus extreme-pressure agents provide excellent lubrication performance, while other additives ensure very good metal corrosion prevention, cleanliness, and foam prevention.

#### 2. Excellent Oxidation Stability

Automobile gears become very hot when they are operated continuously at high loads. In fact, hypoid gears, which have very heavy contact pressures and fast sliding speeds, increase the oil temperature to as high as 120 to 140°C. Extreme-pressure agents are added to gear oil in order to improve the extreme-pressure performance. They are chemically active substances, and they form an extreme-pressure film through a reaction with the metal of the gears.

At high temperatures, however, extreme-pressure agents can decompose or polymerize when they come

into contact with metal, resulting in the formation of harmful sludge.

**GEAR OIL GL-4** exhibits excellent oxidation stability due to an optimal formulation of base oils and the extreme-pressure agents and other additives under demanding conditions for long periods of time.

### ● Grades

**GEAR OIL GL-4** is available in versions 80 and 90. These numbers indicate the SAE viscosity grades for gear oil.

### ● Applications

Differential gears, transmission gears, and steering gears for automobiles, construction machinery, etc.

### ● Containers

200-liter drums, 20-liter cans.

### ● Typical Properties of GEAR OIL GL-4

SAE Viscosity Grade			80	90
Color	(ASTM)		L1.5	L2.0
Density	(15°C)	g/cm <sup>3</sup>	0.885	0.894
Viscosity	(40°C)	mm <sup>2</sup> /s	79.8	185.6
	(100°C)	mm <sup>2</sup> /s	9.75	17.3
Viscosity index			100	99
Flash point	(COC)	°C	230	234
Pour point		°C	-30.0	-22.5

Note: The typical properties may be changed without notice. (June 2011)



## 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 allergic skin reaction
<b>Precautionary Statements:</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>• 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 a 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>