

# Ze-GLES RB

## Refrigeration Oil of Polyol Ester Type for HFC

Ze-GLES RB is a refrigeration oil applicable for various kinds of freezing and air conditioning instruments using HFCs. Since it is composed of a highly efficient polyol ester base oil originally developed by Nippon Oil, it has a high miscibility with HFCs and achieves excellent properties with various characteristics such as chemical stability, lubricity and insulating property.

### ● SPECIAL FEATURES

#### 1. Excellent miscibility with HFCs

Ze-GLES RB is excellent in miscibility with various kinds of HFCs (such as R410A, R407C, R134a and R404A) and is applicable in a wide range of uses.

#### 2. Excellent in chemical stability

Since refrigeration oil is used in a freezing cycle under broad temperature and pressure conditions, it is necessary that no sludge is generated for a long period and that the same properties as in fresh oil are ensured. Due to very highly stable polyol ester substrate oil and to art for additives, Ze-GLES RB is very stable against HFCs and is also excellent in its durability to contamination of moisture and air.

#### 3. Excellent in lubricity

Ze-GLES RB shows an excellent lubricity and achieves an excellent anti-abrasion property in various kinds of compressors such as a screw type, a rotary type and a scroll type. It is also lowly frictional drag as compared with conventional refrigeration oil and has been proved to have a high effect of conservation of energy.

#### 4. Excellent in insulating property

When a refrigeration oil is used in a compressor of a tightly closed type, it is necessary to be insulating for suppressing a leak current from a motor in a compressor. Ze-GLES RB has an excellent insulating property in the same level as that of electric insulating oil.

### ● GRADES

There are two grades in Ze-GLES RB : 32 and 68. (The numbers indicate each grade's viscosity mm<sup>2</sup>/s at 40°C.)

### ● APPLICATIONS

- (1) Lubrication of all types of compressors for refrigerating machines including refrigerators, freezers, ice-makers and air conditioners using HFCs such as R410A, R407C, R134a and R404A.
- (2) Do not apply for refrigerants other than HCFs (such as R22 and ammonia).

### ● CONTAINERS:

200-liter drums and 18-liter cans

### ● TYPICAL TEST DATA FOR Ze-GLES RB

Grade		Ze-GLES RB32	Ze-GLES RB68
Kinematic viscosity	(40°C) mm <sup>2</sup> /s	29.3	65.6
	(100°C) mm <sup>2</sup> /s	5.0	8.2
Viscosity Index		91	90
Acid Value	mgKOH/g	0.01	0.01
Color	ASTM	L0.5	L0.5
Pour Point	°C	≤-40°C	≤-40°C
Flash Point (COC)	°C	210	255
Temperature for Separating into Two Layers (Low-Temperature Side)			
R410A	°C	-16	12
R407C	°C	-29	-13
R134a	°C	-30	-13
R404A	°C	≤-50°C	-44
Volume Resistivity	TΩ·m	1.0	1.0

Notes: The typical properties may be changed without notice. (June 2008)



## Handling Precautions

▼ Follow these precautions when handling this product.

<b>Handling Precautions</b>	<ul style="list-style-type: none"><li>● <u>Inflammation can occur if oil enters the eyes.</u> When handling this oil, wear <u>protective goggles</u> or take other measures to <u>prevent eye contact</u>.</li><li>● <u>Inflammation can occur if oil comes into contact with skin.</u> When handling this oil, wear <u>protective gloves</u> or take other measures to <u>prevent skin contact</u>.</li><li>● Do not drink this oil. (Swallowing this oil can cause diarrhea and nausea.)</li><li>● <u>Keep out of reach of children.</u></li><li>● Read the Material Safety Data Sheet (MSDS) for this product before using the product. Obtain the Material Safety Data Sheet from where you purchased the product.</li></ul>
<b>First Aid</b>	<ul style="list-style-type: none"><li>● In case of eye contact, rinse eyes thoroughly with clean water and consult with a physician.</li><li>● In case of skin contact, wash skin thoroughly with soap and water.</li><li>● If this oil is swallowed, do not induce vomiting. Consult with a physician immediately.</li></ul>
<b>Disposal of Used Oil and Containers</b>	<ul style="list-style-type: none"><li>● Do not apply pressure to empty containers. The containers may burst if pressure is applied.</li><li>● Do not weld, heat, drill, or cut the containers. The remaining oil may ignite and the containers may explode.</li><li>● Follow all applicable laws and regulations when disposing of used oil or containers. If you are unsure of the proper disposal methods, consult first with the seller of the oil.</li></ul>
<b>Storage Method</b>	Seal the container tightly after use in order to prevent dirt, moisture, etc., from entering the oil. Store in a dark location. Avoid direct sunlight.