

IND-1005-2104E

# Ze-GLES RB

## Refrigeration Oil of Polyol Ester Type for HFC

**Ze-GLES RB** is refrigeration oil applicable for various kinds of freezing and air conditioning instruments using HFCs. Since it is composed of highly efficient polyol ester base oil which has been originally developed by us, 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 base oil and additive technology, **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 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. Density

### ● 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
Color	(ASTM)	L0.5	L0.5
Density	(15°C) g/cm <sup>3</sup>	0.947	0.961
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 Number	mgKOH/g	0.01	0.01
Flash Point (COC)	°C	210	255
Pour Point	°C	-50	-40
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>Composition :</b>	Base Oil, Additives
<b>Precautionary pictograms:</b>	Not applicable
<b>Signal word:</b>	Not applicable
<b>Hazard Statement:</b>	Not applicable
<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>• 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></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>