

REF OIL NS

High-Grade Refrigeration Oil

REF OIL NS is a high-grade refrigeration oil blended with refined naphthenic mineral oils. This superior oil has outstanding low-temperature performance and excellent heat resistance, and when used with halogen refrigerants it is extremely stable and forms very little sludge. It performs extremely well as a lubricant for the latest high-speed, high-load refrigerating machines that combine small size with high capacity. It can also provide efficient economical performance with top-class refrigerators and quick-speed freezers. **REF OIL NS** is available in two grades (3GS and 4GS), and it can be used in a wide range of reciprocating, rotating, and turbo refrigerating machines.

● SPECIAL FEATURES

1. EXCELLENT LOW-TEMPERATURE PERFORMANCE

REF OIL NS has a low floc point, so it ensures reliable performance with no wax precipitation in expansion valves or evaporators even with CFCs refrigerants.

2. VERY GOOD CHEMICAL AND THERMAL STABILITY WITH REFRIGERANTS

Refrigeration oils with poor stability react with refrigerants at high temperatures, forming sludge and accelerating the decomposition of the refrigerant. Because **REF OIL NS** is blended with refined naphthenic mineral oil, it is extremely stable even with high-temperature refrigerants. It also resists carbon formation on discharge valves and in other conditions with high-temperature thin films, so it can be used dependably in compressors with high freezing loads.

3. OUTSTANDING COMPATIBILITY WITH REFRIGERANTS

Refrigeration oils should not undergo oil separation inside condensers and they should return easily from the evaporator to compressor, so the oil must dissolve well with the refrigerant. Because **REF OIL NS** is blended with refined naphthenic mineral oil, it dissolves well with all types of HCFCs, CFCs and ammonia refrigerants, and it performs especially well in low-temperature freezers.

4. QUICK SEPARATION FROM REFRIGERANT AND LITTLE FOAMING

While the refrigerant must be able to dissolve in the refrigeration oil, it must also separate from the oil quickly during evaporation. **REF OIL NS** separates quickly from the refrigerant, so it keeps the amount of foaming to a minimum.

5. CONTAINS NO MOISTURE

All of the moisture in **REF OIL NS** is completely removed before the oil is put into special containers, so it contains almost no moisture when it is shipped. As a result, it has very high dielectric strength.

● GRADES

There are two grades in the **REF OIL NS** series: 3GS and 4GS.

● APPLICATIONS

Lubrication of all types of compressors for refrigerating machines, including refrigerators, freezers, ice-makers, and air conditioners using HCFCs, CFCs and ammonia.

● CONTAINERS

200-liter drums and 20-liter cans.

● TYPICAL PROPERTIES OF REF OIL NS

Grade		3GS	4GS	
Corresponding JIS K2211 grade (refrigeration oil)		22	32	
Appearance		Yellow, liquid	Yellow, liquid	
Color	(ASTM)	L0.5	L1.0	
Density	(15 °C)	0.914	0.920	
Kinematic viscosity	(40°C)	mm ² /s	29.5	55.5
	(100°C)	mm ² /s	4.35	5.87
Flash point	(COC)	°C	168	178
Pour point		°C	-42.5	-37.5
Floc point		°C	-53.0	-47.0
Thermal stability	(170°C, 36 h)	Passed	Passed	
Copper Corrosion	(100°C, 3h)	1	1	
Dielectric strength	(when shipped)	kV	> 40	> 40

Notes: The typical properties may be changed without notice. (June 2010)



Handling Precautions

▼ Follow these precautions when handling this product.

Composition :	Highly refined mineral oil
Hazard category	Not applicable
Precautionary Statements:	<ul style="list-style-type: none"> • Do not handle until all safety precautions have been read and understood. • Wear protective gloves/protective clothing/eye protection/face protection. • Do not allow the eyes to become exposed to the product. Do not swallow the product. • Wash hands thoroughly after handling. • Do not eat, drink or smoke when using this product.
Prevention	
Response	<ul style="list-style-type: none"> • IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. • IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. • If the eyes are exposed to the product: Rinse the eyes with plenty of running water and immediately contact a physician. • IF ON SKIN: Wash with plenty of soap and water.
Storage	<ul style="list-style-type: none"> • The product must be stored in a cool, well-ventilated location where it will not be exposed to direct sunlight. • Containers that have been opened must be tightly sealed.
Disposal	<ul style="list-style-type: none"> • Dispose of contents/container in accordance with local/regional/national/international regulations. • If there are any doubts about proper methods of handling the product, contact the point of purchase before proceeding with usage.