

# ATMOS(N)

## High-Grade Refrigeration Oil for HCFC

ATMOS(N) is a high-grade refrigeration oil blended from a base of alkylbenzene and refined mineral oil. This superior oil has outstanding low-temperature performance and excellent heat resistance, and it is extremely stable and forms very little sludge. It performs extremely well as a lubricant for the latest high-performance refrigerating machines that combine small size with high capacity. It can also be used for huge refrigerators and quick-speed refrigerating machines. ATMOS(N) is available in four 40°C viscosity grades (22, 32, 46, and 68), and it can be used in a wide range of reciprocating, rotating, and turbo refrigerating machines with HCFCs.

### ● SPECIAL FEATURES

#### 1. EXCELLENT LOW-TEMPERATURE PERFORMANCE

ATMOS(N) has a low pour point, so it can be used in refrigerating machines with low evaporation temperatures. And since it contains no wax, it has a low floc point, so it ensures reliable performance with no wax precipitation in expansion valves or evaporators.

#### 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 ATMOS(N) is blended from synthetic alkylbenzene and refined mineral oil, it is extremely stable even with 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 ATMOS(N) is made with alkylbenzene, it dissolves well with HCFCs, 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.

ATMOS(N) separates quickly from the refrigerant, so it keeps the amount of foaming to a minimum.

#### 5. CONTAINS NO MOISTURE

All of the moisture in ATMOS(N) 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.

Even when ATMOS(N) causes no freezing of expansion valves or corrosion of equipment parts, and it does not cause insulation loss in electric motors even when used in sealed refrigerating machines.

### ● GRADES

There are four grades in the ATMOS(N) series: 22, 32, 46, and 68. These 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 HCFCs.
- (2) Don't apply for ammonia and CFCs (R11, R12 and others).

### ● CONTAINERS:

200-liter drums and 20-liter cans.

## TYPICAL TEST DATA FOR ATMOS(N)

	Grade		22(N)	32(N)	46(N)	68(N)
Kinematic viscosity	(40°C)	mm <sup>2</sup> /s	21.5	30.7	42.0	62.2
	(100°C)	mm <sup>2</sup> /s	3.93	4.71	5.36	6.31
Pour point		°C	< -55	< -45	< -37.5	< -35
Floc point		°C	< -50	< -50	< -50	< -50
Thermal stability	(170°C, 36 h)		Passed	Passed	Passed	Passed
Dielectric strength	(whenhipped)	kV	> 40	> 40	> 40	> 40
Corresponding JIS K2211 grade (refrigeration oil)			22	32	46	68

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.