

IND-1008-2404E

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.

Therefore, 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 hermetic type refrigerating machines.

● GRADES

There are four grades in the ATMOS(N) series: 22(N), 32(N), 46(N), and 68(N). These numbers indicate each grade's viscosity mm²/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 such as R22.
- (2) Don't apply for ammonia and CFCs (R11, R12 and others).

● **CONTAINERS:**

200-liter drum and 20-liter can

● **TYPICAL TEST DATA FOR ATMOS(N)**

Grade			22(N)	32(N)	46(N)	68(N)
Corresponding JIS K2211 grade (refrigeration oil)			22	32	46	68
Color	(ASTM)		L0.5	L0.5	L0.5	L0.5
Density	(15°C)	g/cm ³	0.879	0.900	0.920	0.927
Kinematic viscosity	(40°C)	mm ² /s	21.5	30.7	42.0	62.2
Kinematic viscosity	(100°C)	mm ² /s	3.93	4.71	5.36	6.31
Flash point	(COC)	°C	208	208	210	212
Pour point		°C	-55.0	-45.0	-37.5	-35.0
Thermal stability	(170°C, 36 h)		Passed	Passed	Passed	Passed
Dielectric strength	(when shipped)	kV	> 40	> 40	> 40	> 40

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



**Handling
Precautions**

▼ Follow these precautions when handling this product.

ATMOS 22(N)

Composition :	Base Oil (s), Additives
Hazard pictograms:	
Signal word:	Danger
Hazard Statement:	May be fatal if swallowed and enters airways
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/doctor. • 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. • Do NOT induce vomiting.
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. • Store locked up.
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.

ATMOS 32(N), 46(N), 68(N)

Composition :	Base Oil(s), Additives
Hazard pictograms:	Not applicable
Signal word:	Not applicable
Hazard Statement:	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	
Storage	<ul style="list-style-type: none"> • IF SWALLOWED: Immediately call a POISON CENTER/doctor. • 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.
Disposal	<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. • 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.