

METATRON™ 269 H-I

DESCRIPTION:

Metatron™ 269 H-I is a fully synthetic anti-wear, food grade oil that is specially formulated for use in the lubrication of food, feed and pharmaceutical processing and packaging equipment, especially those pieces of equipment that are subjected to high loads and high moisture conditions.



Metatron™ 269 H-I meets the requirements for a NSF H-I quality lubricant and the requirements of the United States Code of Federal Regulations 21CFR 178.3570, 178.3620(b), and 573.680 of the United State's Food and Drug Administration's Regulations.

APPLICATIONS:

Metatron™ 269 H-I can be used in the lubrication of all types of

compressors applications including refrigeration compressors, hydraulic, vacuum pump, pump, air line, chain, bearing, general oiling and heat transfer applications where there is a chance of incidental contact with food, foodstuffs, drinking water, potable water, or ground water may occur. Typically these applications can be found in the following industries

Meat and Poultry Processing Plants
 Fish and Seafood Processing Plants
 Soft Drink and Bottling Plants
 Cheese and Cheese Product Producers
 Snack Food Manufacturers
 Pet Food and Animal Feed Producers
 Pharmaceutical and Drug Manufacturers
 Food and Beverage Container Manufacturers
 Water Well Drillers

Egg Processing Plants
 Breweries and Wineries
 Vegetable and Fruit Processors
 Bakeries

Pasta Manufacturers
 Oil Mills and Seed Cake Processors
 Cosmetic Manufacturers

Paper and Paperboard Manufacturers

Drinking and Potable Water Treatment Plants

COMPOSITION AND PERFORMANCE CHARACTERISTICS:

Metatron™ 269 H-I is blended from the highest quality, highly refined, severely hydrofinished and purified non-toxic technical white polyalphaolefin (PAO) synthetic base fluids available. These technical white PAO synthetic base fluids provide **Metatron™ 269 H-I** with the following advantages:



1. Excellent resistance to thermal degradation
2. Superior oxidative stability
3. Low Volatility – This results in less make-up requirements due to evaporation loss.
4. A High Viscosity Index – This results in a minimum change in viscosity with temperature.
5. Excellent Cold Temperature starting and pumpability
6. Greater hydrolytic stability and demulsibility characteristics
7. Excellent resistance to acidic compounds
8. Non- Toxic – meets the United States Food and Drug Administration’s requirements for synthetic technical white mineral oils.
9. Excellent operating temperature reduction.
10. Compatibility with all types of seals and coatings
11. Extended drain intervals.

Blended into the technical white PAO synthetic base fluids is a highly specialized non-toxic food grade approved additive package and a food grade antimicrobicide which provides the **Metatron™ 269 H-I** with following outstanding performance features.

1. Exceptional anti-wear and load carrying capabilities.
2. Excellent rust and corrosion inhibition.
3. Enhanced oxidation stability.
4. Excellent anti-foam and air release properties.
5. Enhanced oxidation stability.
6. Protection against rancidity and build-up due to bacterial and fungal growth

TYPICAL PROPERTIES:

ISO GRADE	32	46	68
AGMA Grade	---	I	2
Specific Gravity @15.5°C (60°F)	0.8625	0.83	0.87
Viscosity, SUS @ 38°C (100°F) (ASTM D-445)	149-171.6	235-255.7	350.9-376.6
Viscosity @40°C, cSt (ASTM D-445)	29.30-33.50	40.00-50.00	68.50-73.50
Viscosity @100°C, cSt (ASTM D-445)	5.52-6.09	7.69-8.15	10.38-12.50
Brookfield Viscosity (ASTM D-2983)			
@ -18°C (0°F), cP	460	910	2,435
@-29°C (-20°), cP	1,735	4,360	10,750
Viscosity Index (ASTM D-2270)	130	135	138
Flash Point °C (°F) (ASTM D-92)	235°C (435°F)	238°C (460°F)	257°C (495°F)
Fire Point °C (°F) (ASTM D-92)	276°C (529°F)	279°C (535°F)	257°C (530°F)
Pour Point °C (°F) (ASTM D-92)	-54°C (-65°F)	-54°C (-65°F)	-54°C (-65°F)
Copper Strip Corrosion Test (ASTM D-130)	1a	1a	1a
Rust Test (ASTM D-665)			
Procedure A (Distilled Water)	Pass	Pass	Pass
Procedure B (Salt Water)	Pass	Pass	Pass
Demulsibility Test (ASTM D-1401)	40-40-0	40-40-0	40-40-0
Oil-Water-Emulsion (minutes)	(15minutes)	(15minutes)	(15minutes)
Oxidation Stability Test (ASTM D-943)			
Hours to TAN of 2	+10,000	+10,000	+10,000
Sludge Tendencies (ASTM D-4310)			
Total sludge, mg.	20	20	20
Four Ball Wear Test (ASTM D-4172)			
(1hour/40kg/54°C)			
Wear Scar Diameter, mm.	0.38	0.4	0.4
Timken EP Test (ASTM D-2782)			
OK Load, lbs.	30	30	30
Conradson Carbon Residue (ASTM D-189)	0.02	0.02	0.02
Total Acid Number (ASTM D-664)	0.69	0.69	0.69
Vickers Pump Wear Test (ASTM D-2882)			
100 hours @ 1000Psi @ 66°C (150°F)			
Weight Loss, mg.	10	10	10
Ring	1.5	1.5	1.5
Vane	11.5	11.5	11.5
Total Weight Loss			
Vickers Pump Wear Test (ASTM D-2882)			
100 hours @ 1000Psi @ 66°C (150°F)			
Weight Loss, mg.			
Ring	15	15	15
Vane	5	5	5
Total Weight Loss	20	20	20
% Evaporation Loss @ 372°C (700°F)	2.6%	2.6%	2.6%
(ASTM D-2887)			
Foam Test (ASTM D892)			
Sequence I	0/0	0/0	0/0
Sequence II	0/0	0/0	0/0
Sequence III	0/0	0/0	0/0
FZG A/8.3/90 (ASTM D-5182)	11 th	11 th	11 th
Load Failure Stage			

ISO GRADE	100	150
AGMA Grade	3	4
Specific Gravity @15.5°C (60°F)	0.86	0.835
Viscosity, SUS @ 38°C (100°F) (ASTM D-445)	474-511.2	748.7-827.2
Viscosity @40°C, cSt (ASTM D-445)	92.50-100	145-160
Viscosity @100°C, cSt (ASTM D-445)	13.5-15.00	18.17-19.52
Viscosity Index (ASTM D-2270)	153	140
Flash Point °C (°F) (ASTM D-92)	262°C (505°F)	277°C (530°F)
Fire Point °C (°F) (ASTM D-92)	282°C (540°F)	293°C (560°F)
Pour Point °C (°F) (ASTM D-92)	-34°C (-30°F)	-37°C (-35°F)
Copper Strip Corrosion Test (ASTM D-130)	1a	1a
Rust Test (ASTM D-665)		
Procedure A (Distilled Water)	Pass	Pass
Procedure B (Salt Water)	Pass	Pass
Demulsibility Test (ASTM D-1401)	40-40-0	40-40-0
Oil-Water-Emulsion (minutes)	(15minutes)	(15minutes)
Oxidation Stability Test (ASTM D-943)		
Hours to TAN of 2	+10,000	+10,000
Sludge Tendencies (ASTM D-4310)		
Total sludge, mg.	20	20
Four Ball Wear Test (ASTM D-4172)		
(1hour/40kg/54°C)		
Wear Scar Diameter, mm.	0.4	0.4
Timken EP Test (ASTM D-2782)		
OK Load, lbs.	30	30
Conradson Carbon Residue (ASTM D-189)	0.02	0.02
Total Acid Number (ASTM D-664)	0.69	0.69
Vickers Pump Wear Test (ASTM D-2882)		
100 hours @ 1000Psi @ 66°C (150°F)		
Weight Loss, mg.	10	10
Ring	1.5	1.5
Vane	11.5	11.5
Total Weight Loss		
Vickers Pump Wear Test (ASTM D-2882)		
100 hours @ 1000Psi @ 66°C (150°F)		
Weight Loss, mg.		
Ring	15	15
Vane	5	5
Total Weight Loss	20	20
% Evaporation Loss @ 372°C (700°F) (ASTM D-2887)	3%	3%
Foam Test (ASTM D892)		
Sequence I	0/0	0/0
Sequence II	0/0	0/0
Sequence III	0/0	0/0
FZG A/8.3/90 (ASTM D-5182)	11 th	11 th
Load Failure Stage		

COMPATIBILITY OF METATRON™ 269 WITH VARIOUS REFRIGERANT GASES

Metatron 269 can be safely used in those refrigeration compressor applications that employ the use of the following refrigerant fluids.

Refrigerant Designation	Type	Chemical Name
R-11	CFC	TRICHOFLUORMETHANE
R-12	CFC	DICHLORODIFLUROMETHANE
R-13	CFC	CHLOROTRIFLUOMETANE
R-23	HFC	TRIFLUOROMETHANE
R-113	CFC	1,1,2-RICHLOROTRIFLUOROETHANE
R-114	CFC	1,2,-DICHLORTETRAFLUROETHANE
R-115	CFC	CHLOROPENTAFLUROETHANE
R-290	-----	PROPANE
R-717	-----	AMMONIA
R-744	-----	CARBON DIOXIDE

Metatron 269 cannot be used in those refrigeration compressor applications that employ the use of the following refrigerant fluids

Refrigerant Designation	Type	Chemical Name
R-22	HCFC	CHLORODIFLUROMETHANE
R-32	HCFC	DIFLUOROMETHANE
R-123	HCFC	1,1-DICHLORO-2,2,2-TRIFLUOROETHANE
R-124	HCFC	2-CHLORO-1,1,1,2-TETRAFLUROETHANE
R-125	HFC	PENTAFLUROETHANE
R-134A	HFC	1,1,1,2-TETRAFLUROETHANE
R-141B	HCFC	1,1,-DICHLORO-1-FLUROETHANE
R-142B	HCFC	1-CHLORO-1,1-DIFLUOROETHANE
R-143A	HFC	1,1,1-TRIFLUOROETHANE
R-152A	HCFC	1,1-DIFLUOROETHANE
R-218	HFC	OCTAFLUROPROPANE
R-227EA	HFC	1,1,2,3,3,3-HEPTAFLUROPROPANE
R-245A	HFC	1,1,2,2,3-PENTAFLUROPROPANE
R-500	CFC/HFC	MIXTURE OF R-22/152A
R-502	HCFC/CFC	MIXURE OF R-22/R-115