

METATRON™ 276 H-I



DESCRIPTION:

Metatron™ 276 H-I is a synthetic blend anti-wear, extreme pressure 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™ 276 H-I meets the requirements for a USDA 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™ 276 H-I can be used in the lubrication of all types of enclosed gear, chain guide, chain and conveyor 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™ 276 H-I is blended from a combination of highest quality, highly refined, severely hydrofinished and purified non-toxic technical white polyalphaolefin (PAO) synthetic base fluids and technical white and U.S.P grade white oils available. These technical white PAO synthetic base fluids and technical white and U.S.P. grade white oils provide **Metatron™ 276 H-I** with the following advantages:

1. Excellent lubricity and film strength
2. Superior oxidative stability
3. Excellent resistance to thermal degradation
4. A high viscosity index
5. Excellent hydrolytic stability
6. Excellent resistance to acidic compounds
7. Very good low temperature properties
8. A reduction in operating temperatures
9. Compatibility with all types of seals and coatings
10. Extended drain intervals

Blended into the technical white PAO synthetic base fluids and technical white and U.S.P. grade white oils is a highly specialized non-toxic food grade approved additive package and a food grade antimicrobicide which provides the **Metatron™ 276 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	100	150	90
SAE GRADE			
AGMA Grade	3EP	4EP	---
Specific Gravity @15.5°C (60°F)	0.8719	0.8783	0.84
Viscosity @40°C, cSt (ASTM D-445)	90.00-100	144-165	190-255
Viscosity @100°C, cSt (ASTM D-445)	10.50-13.50	15.00-21.50	19.00-23.00
Viscosity Index (ASTM D-2270)	118	130	113
Flash Point °C (°F) (ASTM D-92)	220°C (440°F)	228°C (442°F)	227°C (440°F)
Fire Point °C (°F) (ASTM D-92)	227°C (440°F)	243°C (470°F)	243°C (440°F)
Pour Point °C (°F) (ASTM D-92)	-26°C (-15°F)	-23°C (-10°F)	-10°C (-23°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)	(20minutes)	(20minutes)	(20minutes)
Oxidation Stability Test (ASTM D-943)			
Hours to TAN of 2	4000	4000	4000
Falex Continuous Load Procedure A (ASTM D-3233)			
Failure Load, lbs	1250	1250	1350
Four Ball Wear Test (ASTM D-4172)			
(1 hour/40kg/54°C)			
Wear Scar Diameter, mm.	0.45	0.4	0.4
Timken EP Test (ASTM D-2782)			
OK Load, lbs.	30	35	40
Total Acid Number (ASTM D-664)	0.03	0.03	0.03
% Evaporation Loss @ 372°C (700°F) (ASTM D-2887)	7.0%	5.5%	3.8%
% Evaporation Loss @ 107°C (225°F), 22hours (ASTM D-972)	2%	1.5%	1.5%
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	12 th
Load Failure Stage			

TYPICAL PROPERTIES (Cont):

ISO GRADE	220	320	140
SAE GRADE			
AGMA Grade	5EP	6EP	---
Specific Gravity @15.5°C (60°F)	0.8443	0.8789	0.86
Viscosity @40°C, cSt (ASTM D-445)	200-250	320-345	300-449
Viscosity @100°C, cSt (ASTM D-445)	16.50-23.50	29.00-35.00	35.00-42.00
Viscosity Index (ASTM D-2270)	120	134	154
Flash Point °C (°F) (ASTM D-92)	227°C (440°F)	232°C (450°F)	235°C (455°F)
Fire Point °C (°F) (ASTM D-92)	243°C (470°F)	243°C (470°F)	249°C (480°F)
Pour Point °C (°F) (ASTM D-92)	-23°C (-10°F)	-18°C (0°F)	-18°C (0°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)	(20minutes)	(20minutes)	(20minutes)
Oxidation Stability Test (ASTM D-943)			
Hours to TAN of 2	4000	4000	4000
Falex Continuous Load Procedure A (ASTM D-3233)			
Failure Load, lbs	1360	1360	1500
Four Ball Wear Test (ASTM D-4172)			
(1hour/40kg/54°C)			
Wear Scar Diameter, mm.	0.45	0.4	0.35
Timken EP Test (ASTM D-2782)			
OK Load, lbs.	40	40	40
Total Acid Number (ASTM D-664)	0.03	0.03	0.03
% Evaporation Loss @ 372°C (700°F) (ASTM D-2887)	3.8%	3.8%	4%
% Evaporation Loss @ 107°C (225°F), 22hours (ASTM D-972)	1.5%	1.5%	1%
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)	12 th	12 th	12 th
Load Failure Stage			

TYPICAL PROPERTIES (Cont):

ISO GRADE	460	680
SAE GRADE		
AGMA Grade	7EP	8EP
Specific Gravity @15.5°C (60°F)	0.8583	0.8843
Viscosity @40°C, cSt (ASTM D-445)	420-470	619-635
Viscosity @100°C, cSt (ASTM D-445)	35.00-40.00	50.00-60.00
Viscosity Index (ASTM D-2270)	128	149
Flash Point °C (°F) (ASTM D-92)	235°C (455°F)	238°C (460°F)
Fire Point °C (°F) (ASTM D-92)	249°C (480°F)	252°C (485°F)
Pour Point °C (°F) (ASTM D-92)	-18°C (0°F)	-12°C (10°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)	(20minutes)	(20minutes)
Oxidation Stability Test (ASTM D-943)		
Hours to TAN of 2	4000	4000
Falex Continuous Load Procedure A (ASTM D-3233)		
Failure Load, lbs	1500	1500
Four Ball Wear Test (ASTM D-4172)		
(1hour/40kg/54°C)		
Wear Scar Diameter, mm.	0.35	0.3
Timken EP Test (ASTM D-2782)		
OK Load, lbs.	40	40
Total Acid Number (ASTM D-664)	0.03	0.03
% Evaporation Loss @ 372°C (700°F) (ASTM D-2887)	4.0%	4.1%
% Evaporation Loss @ 107°C (225°F), 22hours (ASTM D-972)	1%	1%
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)	12 th	12 th
Load Failure Stage		