

METATRON™ 557

DESCRIPTION AND APPLICATION

Metatron™ 557 is an anti-wear, mildly extreme pressure oil that is formulated to meet the lubrication requirements of machine tool slides and ways

COMPOSITION AND PERFORMANCE CHARACTERISTICS

Metatron™ 557 is blended from the finest high viscosity index severely solvent refined, severely hydrofinished 100% paraffin base stock available. These high viscosity index 100% pure paraffin base stocks provide the **Metatron™ 557** with the ability to possess superior oxidation resistance and chemical stability.

Blend into the 100% pure paraffin base oils is a highly specialized multi-functional additive package and a adhesive/cohesive additives that provides the **Metatron™ 557** with the following performance properties:

1. Exceptional anti-wear protection
 2. Reduced wear, scoring and galling
 3. Elimination of stick slip motion and chatter in moving machine parts.
 4. Less adjusting of jibs due to less wear.
 5. Extended slide and way life
 6. Enhanced thermal and oxidative stability
 7. Superior hydrolytic stability
 8. Excellent demulsibility characteristics
 9. Excellent rust and corrosion protection
 10. Excellent anti-foaming and air release properties
 11. Excellent resistance to coolant wash-off
 12. Reduced sludge, varnish and deposit formation
 13. Extended coolant life due to less tramp oil contamination
 14. Elimination of product build-up on the slides and ways.
 15. Clean up of lacquered systems
 16. Reduced product usage
 17. Reduction in operating temperatures
 18. Reduced system maintenance
- Less downtime

ADDITIONAL ANTIWEAR PROTECTION WITH MICRO MOLY:

The majority of slides and ways are designed to perform under hydrodynamic lubrication conditions. That is a full fluid film separates the metal surfaces of the slides and ways during operation. However, during periods of high shock loading or at cold start-up this film can be destroyed. Unless a boundary lubricant is present in the slide and way lubricant when this full fluid film is destroyed, wear, scoring and galling of the metal surfaces of the slides and ways can occur.

To prevent this wear a liquid soluble type of moly known, as Micro Moly™ is further blended into the **Metatron™ 557**. Micro Moly™ plates itself to metallic sliding and rubbing metallic surfaces of the slide and way systems. This plating action forms a long lasting solid lubricant film on these sliding and rubbing surfaces that will withstand pressures up to 500,000 pounds per square inch. Once plated to the sliding and rubbing surfaces Micro Moly™ produces a smooth finished surface, thus reducing friction between the moving parts. This results is less wear and heat being generated which in turn reduces operating temperatures and downtime.

MANUFACTURERS REQUIREMENTS AND SPECIFICATIONS:

Metatron™ 557 meets and exceeds the requirements of Cincinnati Millicron P-47 and P-50 and S.I.P. Manufacturing.

TYPICAL PROPERTIES

ISO GRADE	68	100	220
AGMA Grade	---	---	1
Specific Gravity @15.5°C (60°F)	0.8765	0.8816	0.8927
Viscosity, SUS @ 38°C (100°F) (ASTM D-445)	336-361	479-632	1036-1037
Viscosity @40°C, cSt (ASTM D-445)	65.00-70.00	92.00-121	196-205
Viscosity @100°C, cSt (ASTM D-445)	8.5-9.5	10.5-13.0	17.00-19.00
Viscosity Index (ASTM D-2270)	105	100	105
Flash Point °C (°F) (ASTM D-92)	224°C (435°F)	249°C (480°F)	265°C (510°F)
Fire Point °C (°F) (ASTM D-92)	243°C (470°F)	282°C (540°F)	265°C (510°F)
Pour Point °C (°F) (ASTM D-92)	0°C (-18°F)	-15°C (5°F)	-12°C (10°F)
Aniline Point °C (°F) (ASTM D-611)	109°C (228°F)	116°C (240°F)	122°C (252°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
Hydrolytic Stability (ASTM D-2619)			
Copper Wt. Loss mg/cm ²	0.08	0.1	0.1
Acidity of water mg/KOH	0.22	0.25	0.3
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	3,000+	3,000+	3,000+
Sludge Tendencies (ASTM D-4310)			
Total sludge, mg.	36	36	36
Total Copper, mg.	22	22	22
Total Iron, mg.	0.1	0.1	0.1
Thermal Stability Test (Cincinnati Millicron Method) 168hours/135°C, copper/steel catalyst)			
Sludge mg/1000ml	3.9	3.9	3.9
Condition of Copper Rod	1	1	1
Condition of Iron Rod	1	1	1
Four Ball Wear Test (ASTM D-4172) (1hour/40kg/54°C)			
Wear Scar Diameter, mm.	0.45	0.4	0.4
Four Ball E.P. Test (ASTM D-2783)			
Weld Point, kgs.	126	126	126
Load Wear Index, kgs	26.2	26.2	27.2
Falex Continuous Load Procedure A (ASTM D-3233)	1250	1250	1250
Failure Load, lbs.			
Conradson Carbon Residue (ASTM D-189)	0.3	0.3	0.3
Total Acid Number (ASTM D-664)	0.5-0.9	0.5-0.9	0.5-0.9
FZG Test A/8.3/90 (ASTM D-5182)			
Load Stage Pass	13 TH	13 TH	13 TH
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
Air Release (ASTM D-3427)			
Time (minutes @ 50°C/122°)	0.5	0.5	1