Molysyn Manufacturing Co.

ISO 9002 Certified

TECHNICAL DATA

450 USDA H-1 FOOD GRADE MULTI PURPOSE SYNTHETIC "HTC" OIL

M-450 USDA H-1 HTC is an anti-wear, Food Grade Oil that is specially formulate 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.

M-450 Food Grade HTC meets the requirements for a USDA H-1 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 States Food and Drug Administration's Regulations.

M-450 Food Grade HTC can be used in lubrication of all types of compressors, hydraulic, vacuum pump, pump, chain, bearing, and general oiling 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
Drinking and Potable Water Treatment Plants
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
Water Well Drillers

M-450 Food Grade HTC is blended from the finest quality, highly refined, severely hydro-finished, purified, non-toxic, non-staining 100% paraffin base technical white and U.S.P. grade white oils available. Combined with these paraffin base technical white oils is a specialized non-toxic food grade approved additive package, which provides the Food Grade HTC with the following performance characteristics:

1. Excellent lubricity and film strength
2. Enhanced oxidative stability
3. Excellent resistance to thermal degradation
4. A high viscosity index
5. Excellent hydrolytic stability and resistance to emulsification
6. Excellent resistance to acidic compounds
7. Exceptional anti-wear and load carrying capabilities
8. Excellent rust and corrosion inhibition
9. Excellent anti-foam and air release properties
10. Protection against rancidity and build up due to bacterial and fungal growth
11. Longer service life and less deposit formation

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Typical Specification:

ISO Grade	32	46	68	100	150
SAE Grade	10	15	20	30	40
AGMA Grade	-	1	2	3	4
Specific Gravity @ 15.5°C (60°F)	0.8618	0.8662	0.8662	0.8719	0.8693
Viscosity, SUS @ 38°C (100°F) (ASTM D-445)	149.6-205.5	224.3-241	279-345.9	498.2-519.40	734.6-821.9
Viscosity @ 40°C, cSt (ASTM D-445)	29.00-40.00	44.00-47.00	54.00-67.00	95.00-100	140-157
Viscosity @ 100°C, cSt (ASTM D-445)	5.2-6.5	6.5-7.5	7.5-9.1	10.00-12.00	14.00-16.00
Viscosity Index (ASTM D-2270)	112	110	105	110	105
Flash Point °F/°C (ASTM D-92)	405°/207°	415°/213°	430°/221°	457°/236°	477°/247°
Fire Point °F/°C (ASTM D-92)	435°/224°	445°/229°	460°/238°	485°/252°	495°/247°
Pour Point °F/°C (ASTM D-97)	-50°/45°	-48°/45°	-45°/48°	–45°/48°	-40°/52°
Copper Strip Corrosion Test (ASTM D-130)	1a	1a	1a	1a	1a
Rust Test (ASTM D-665 Procedure A (Distilled Water)	Pass	Pass	Pass	Pass	Pass
Procedure B (Salt Water)	Pass	Pass	Pass	Pass	Pass
Demulsibility Test (ASTM D-1401) Oil – Water – Emulsion	40-40-0	40-40-0	40-40-0	40-40-0	40-40-0
Minutes	20	20	20	20	20
Oxidation Stability Test (ASTM D-943) Hours to TAN of 2	3,500	3,500	3,500	3,500	3,500
Sludge Tendencies (ASTM D-4310) Total Sludge, mg	36	36	36	36	36
Four Ball Wear Test (ASTM D-4172) (1 hour/40kg/130°F/54°C) Wear Scar Diameter, mm	0.45	0.45	0.45	0.45	0.45
Four Ball EP Test (ASTM D-2783) Weld Point, kgs.	250	250	250	250	315
Conradson Carbon Residue (ASTM D-189)	0.03	0.03	0.03	0.03	0.03
Total Acid Number (ASTM D-664)	0.5	0.5	0.5	0.5	0.5
Vickers Pump Wear Test (ASTM D-2882) 100 hours @ 1000psi @ 150°F/66°C) Weight Loss, mg Ring	10	10	10	10	-
Vane	1.5	1.5	1.5	1.5	-
Total Weight Loss	11.5	11.5	11.5	11.5	-
% Evaporation Loss (ASTM D-972) 6.5 hours @ 400°F/204°C	10	10	10	10	10
% Evaporation Loss (ASTM D-972) 22 hours @ 225°F/107°C	2	2	2	2	3