

## 280 FOOD GRADE HTC

Food Grade 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.

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 and is registered with and meets NSF International's guidelines for use as a lubricant with incidental contact (H1) in and around food processing areas.

Food Grade HTC can be used in the lubrication of all types of compressors, hydraulic, vacuum pump, pump, airline, 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	Egg Processing Plants
Fish and Seafood Processing Plants	Breweries and Wineries
Soft Drink and Bottling Plants	Vegetable and Fruit Processors
Cheese and Cheese Product Producers	Bakeries
Snack Food Manufacturers	Pasta Manufacturers
Pet Food and Animal Feed Producers	Oil Mills and Seed Cake Processors
Pharmaceutical and Drug Manufacturers	Cosmetic Manufacturers
Food and Beverage Container Manufacturers	Paper and Paperboard Manufacturers
Water Well Drillers	Drinking and Potable Water Treatment Plants

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:

- **Excellent lubricity and film strength**
- **Enhanced oxidative stability**
- **Excellent resistance to thermal degradation**
- **A high viscosity index-**
- **Excellent hydrolytic stability and resistance to emulsification**
- **Excellent resistance to acidic compounds**
- **Exceptional anti-wear and load carrying capabilities**
- **Excellent rust and corrosion inhibition**
- **Excellent anti-foam and air release properties**
- **Longer service life and less deposit formation**

Food Grade HTC does not contain any natural products that are derived from animals, nuts or genetically modified organisms. These products and the raw materials used in their formulation also do not contain any allergens, Bovine Spongiform Encephalopathy (BSE), Transmissible Spongiform Encephalopathy (TSE) or Animal Derived Products and their use will not promote the growth of bacterial and fungal organisms.

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Incidental contact of the food product with Schaeffer Mfg.'s different food grade oils and greases will not adulterate the food product. This Product is acceptable as a lubricant with incidental food contact (H1) for use in and around food processing areas. Such compounds may be used on food processing equipment as a protective anti-rust film, as a release agent on gaskets or seals of tank closures, and as a lubricant for machine parts and equipment in locations in which there is a potential exposure of the lubricated part to food. The amount used should be the minimum required to accomplish the desired technical effect on the equipment. If used as an anti-rust film, the compound must be removed from the equipment surface by washing or wiping, as required to leave the surface effectively free of any substance which could be transferred to food being processed.

NSF Registration numbers for 280 Food Grade HTC:

280 Food Grade HTC ISO 32: 135459  
 280 Food Grade HTC ISO 46: 135457  
 280 Food Grade HTC ISO 68: 135446  
 280 Food Grade HTC ISO 100: 135434

## TYPICAL PROPERTIES

<b>ISO Grade</b>	<b>22</b>	<b>32</b>	<b>46</b>	<b>68</b>	<b>100</b>
<b>SAE Grade</b>	<b>5</b>	<b>10</b>	<b>20</b>	<b>20</b>	<b>30</b>
<b>AGMA Grade</b>	<b>----</b>	<b>----</b>	<b>1</b>	<b>2</b>	<b>3</b>
Specific Gravity @ 15.5°C (60°F)	0.8578	0.8618	0.862	0.8662	0.8719
Viscosity, SUS @ 38°C (100°F) (ASTM D-445)	88.6-110	149.6-205.5	224.3-241	279-345.9	498.2-519.4
Viscosity @ 40°C, cSt (ASTM D-445)	19.0-23.0	31.0-36.0	44.0-47.0	61.2-73.5	93.0-107
Viscosity @ 100°C, cSt (ASTM D-445)	3.5-4.75	5.2-6.5	6.5-7.5	7.5-9.1	10.00-12.00
Viscosity Index (ASTM D-2270)	100	112	110	105	110
Flash Point °F/°C (ASTM D-92)	383°/195°	405°/207°	415°/213°	430°/221°	457°/236°
Fire Point °F/°C (ASTM D-92)	410°/210°	435°/224°	445°/229°	460°/238°	485°/252°
Pour Point °F/°C (ASTM D-97)	10°/-12°	10°/-12°	10°/-12°	15°/-9°	15°/-9°
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
Four Ball Wear Test (ASTM D-4172)					
(1 hour/40kg/130°F/54°C)					
Wear Scar Diameter, mm	0.45	0.4	0.4	0.4	0.4
Four Ball EP Test (ASTM D-2783)					
Weld Point, kgs.	----	250	250	250	250
Falex Continuous Load Procedure A (ASTM D-3233)					
Failure Load, lbs.	----	1740	1740	1740	1740
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

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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
Vickers Pump Wear Test (ASTM D-2882) 100 hours @ 2000psi @ 150°F/66°C)					
Weight Loss, mg					
Ring	----	15	15	15	15
Vane	----	5	5	5	5
Total Weight Loss	----	20	20	20	20
% Evaporation Loss (ASTM D-972) 6.5 hours @ 400°F/204°C	----	10	10	10	10
% Evaporation Loss (ASTM D-972) 22 hours @ 225°F/107°C	6	2	2	2	2
Foam Test (ASTM D-892)					
Sequence I	0/0	0/0	0/0	0/0	0/0
Sequence II	0/0	0/0	0/0	0/0	0/0
Sequence III	0/0	0/0	0/0	0/0	0/0
FZF A/8.3/90 (ASTM D-5182)					
Load Failure Stage	11th	11th	11th	11th	11th