



Syncon® Refrigeration Oil

Phillips 66® Syncon Refrigeration Oil is a premium quality, synthetic lubricant developed for use in rotary screw compressors in refrigeration systems using ammonia, methyl chloride, or carbon dioxide. It has better oxidation resistance than conventional paraffinic and naphthenic-based refrigeration compressor oils, resulting in less buildup of varnish and sludge deposits and longer service life. It is registered by NSF International as an H1 lubricant for use where incidental food contact may occur.

Syncon Refrigeration Oil is formulated with synthetic polyalphaolefin (PAO) base oils and a carefully balanced additive package to provide long service life, excellent deposit control, protection against rust and corrosion, and resistance to foaming. It has a very low pour point and outstanding thermal stability at high temperatures for use in ammonia refrigeration systems, where evaporator temperatures often reach -30°F (-34°C) and discharge temperatures can reach as high as 250°F (121°C). It also has lower volatility than conventional mineral oils, resulting in lower oil consumption.

Syncon Refrigeration Oil is **not** recommended for use with chlorinated hydrocarbons (CFCs) such as Freon R12, R22 or R502, or with fluorinated hydrocarbons such as HFC-134A.

Applications

- Rotary screw refrigeration compressors using ammonia, methyl chloride or carbon dioxide and operating under severe-service conditions
- Ammonia and carbon dioxide manufacturing plants
- Cold storage warehouses and distribution facilities
- Chemical plants
- Ice plants

Syncon Refrigeration Oil meets the requirements of the following industry specifications:

- NSF International H1 and former 1998 USDA H1 guidelines for incidental food contact (Registration No. 147856)

Syncon Refrigeration Oil is recommended for use in ammonia refrigeration compressors where the OEM specifies:

- Copeland Refrigeration Oil
- Frick Oil No. 2A, 3, 7, 9
- Vilter Refrigeration Oil
- York Oil "C"

**Synthetic PAO-
Based Lubricant
for Ammonia
Refrigeration
Compressors;
NSF H1
Registered**





Features/Benefits

- Outstanding low-temperature fluidity
- Outstanding oxidation resistance and thermal stability at high temperatures
- Excellent deposit control
- Low volatility for lower oil consumption and less makeup oil
- Protects against rust and corrosion
- Extended service intervals compared to conventional mineral oil-based refrigeration oils

Syncon® Refrigeration Oil

| Typical Properties | |
|--|-----------|
| ISO Grade | 68 |
| Specific Gravity @ 60°F | 0.832 |
| Density, lbs/gal @ 60°F | 6.93 |
| Color, ASTM D1500 | 0.5 |
| Flash Point (COC), °C (°F) | 243 (469) |
| Pour Point, °C (°F) | -54 (-65) |
| Viscosity | |
| cSt @ 40°C | 70.0 |
| cSt @ 100°C | 10.0 |
| SUS @ 100°F | 360 |
| SUS @ 210°F | 60.0 |
| Viscosity Index | 126 |
| Acid Number, ASTM D974, mg KOH/g | 0.17 |
| Copper Corrosion, ASTM D130, 48 hrs @ 80°C | 1a |
| Demulsibility, ASTM D1401, minutes to pass | 10 |
| Foam Test, ASTM D892, Seq. I, mL | 0/0 |
| Four-Ball Wear Test, ASTM D4172, Scar Diameter, mm | 0.79 |
| Rust Test, ASTM D665 A&B | Pass |

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.