



Refrigeration oil

# SUNISO® GS/GSD series

SUNISO has been the world's leading brand of refrigeration oil since 1927. JSO, the only authorized manufacturer of the brand in the APAC, has been producing SUNISO in Japan over 50 years. SUNISO GS/GSD series is the premium naphthenic refrigeration oil, which performs excellently with various refrigerants. Highly stable, long trouble-free life, and essentially wax free. It can be stably used with the natural refrigerants such as R717, R290.

## APPLICATIONS

Refrigerating  
Compressors using CFC,  
HCFC, HFO or  
Natural refrigerants.

- GS/GSD series can be used in virtually any installation, regardless of compressor or evaporation temperature with HCFC and also perform excellently with **R22, R717, R290, R1233zd(E)**.
- GSD series has enhanced antifoaming properties, so it can solve the problems with foaming phenomena at startup.

## ADVANTAGES

Give your compressors  
high performance and  
safety.

- Chemical Stability to extend service life, reducing costs.
- Cleaner Operation of the compressor with fewer deposits that may cause valve sticking.
- Excellent Low Temperature Performance with no wax deposits to plug the system.

## SPECIFICATIONS

Approvals/  
Recommendations/  
References.

Bitzer, Bristol, Carlyle, Copeland, Daewoo, Daikin, Dorin, Embraco, Fusheng, GEA Bock, GEA Grasso, GMCC, HANBELL, Hasegawa Refrigeration, Mayekawa, McQuay, Hitachi, KOBELCO, Kulthorn Kirby, LG, Mitsubishi Heavy Industries, Panasonic, Sanyo, Samsung, Toshiba Carrier, Tatung, Tecumseh, Thermo King and more.

## Typical Properties

| Analysis            | Unit  | Method     | 3GS   | 4GS   | 5GS   | 3GSD  | 4GSD  | 5GSD  |
|---------------------|-------|------------|-------|-------|-------|-------|-------|-------|
| ISO Viscosity Grade |       |            | 32    | 56    | 100   | 32    | 56    | 100   |
| Density at 15°C     | g/cm3 | ASTM D4052 | 0.909 | 0.915 | 0.921 | 0.910 | 0.915 | 0.925 |
| Viscosity (40 °C)   | mm2/s | ASTM D445  | 29.5  | 54.9  | 94.6  | 29.5  | 54.5  | 96.5  |
| Viscosity (100 °C)  | mm2/s | ASTM D455  | 4.3   | 6.0   | 7.8   | 4.4   | 6.1   | 8.1   |
| Pour point          | °C    | ASTM D97   | -40.0 | -35.0 | -27.5 | -40.0 | -35.0 | -25.0 |
| Flash point (COC)   | °C    | ASTM D92   | 178   | 188   | 208   | 178   | 182   | 188   |

Above characteristics are mean values given as an information.

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Application table

|                  | ASHRAE     | Evaporator<br>Temp From | Compressor Type |     |       |          |             |
|------------------|------------|-------------------------|-----------------|-----|-------|----------|-------------|
|                  |            |                         | Piston          |     | Screw |          | Centrifugal |
| HCFC             | R22        | -25 °C                  | 3GS             | 4GS | 4GS   | 5GS      |             |
|                  |            | -35 °C                  | 3GS             | 4GS | 4GS   |          |             |
|                  |            | -50 °C                  | 3GS             |     | 3GS   |          |             |
| Propane          | R290       | -30 °C                  | 3GS             | 4GS | 5GS   |          |             |
| NH3<br>(ammonia) | R717       | -30 °C                  | 3GS             | 4GS |       | 4GS      |             |
|                  |            | -50 °C                  | 3GS             |     |       | 3GS      |             |
| HCFO             | R1233zd(E) | -20 °C                  |                 |     |       | 4GS 4GSD | 4GS 4GSD    |

For equipment under warranty, please refer to equipment builder recommendations.

In changing the technology or brand of refrigeration oil, flushing the system is recommended to minimize contamination with the old technology or brand.

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