



Previous Name: **Shell Clavus Oil S**

Shell Refrigeration Oil **S2 FR-A**

Refrigerator Compressor Lubricant

- **RELIABLE PERFORMANCE**
- **COMPATIBLE WITH NH₃**

Shell Refrigeration Oil S2 FR-A is a low miscibility compressor lubricant intended for use in refrigeration compressors using Ammonia refrigerant. It is formulated from specially refined paraffinic base oils in combination with additives selected to minimise system deposits and provide long service life.

Performance benefits

- **System efficiency**
Shell Refrigeration Oil S2 FR-A has been specially optimised for use in systems where oil separation is required. It has been designed to reduce "light end" oil carryover; this minimises oil thickening in the compressor and reduces oil coating of internal evaporator surfaces thus maintaining overall system efficiency.
- **Extended maintenance intervals**
Shell Refrigeration Oil S2 FR-A has excellent high temperature and oxidation stability providing long service life even where high compressor discharge temperatures are found.
In addition it is formulated to provide excellent control of deposit and sludge formation resulting in extended oil drain intervals in comparison with conventional mineral oil based refrigerator oils.

Applications

- **Refrigerator compressors**
Shell Refrigeration Oil S2 FR-A is recommended for use in open-, semi-open and hermetic compressors in domestic, commercial and industrial refrigeration systems. It can be used in both rotary and reciprocating compressor types
- **Refrigerant compatibility**
Shell Refrigeration Oil S2 FR-A is recommended for use with ammonia (R717) based refrigeration systems where it offers excellent performance, even under high compressor discharge temperatures, or down to evaporation temperatures of -30°C.

It can also be used in systems using hydrocarbons such as propane (R290)

Shell Refrigeration Oil S2 FR-A is **not** recommended for use with CFC, HCFC or HFC refrigerants such as R12, R22 or R134a.

- **Seal compatibility**
Shell Refrigeration Oil S2 FR-A is compatible with all commonly used sealing materials designed for use with mineral oils.
- **Lubricant compatibility**
Shell Refrigeration Oil S2 FR-A is completely miscible with mineral oil, alkylated benzene and PAO based lubricants.

Specifications and Approvals

Shell Refrigeration Oil S2 FR-A meets the requirements of DIN 51503 KAA and KE.

Health and Safety

Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from your Shell representative.

Protect the environment

Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Advice

Advice on applications not covered in this leaflet may be obtained from your Shell representative.



Typical Physical Characteristics

ISO Viscosity Grade	ISO 3448	46	68
Refrigerator oil	DIN51503	KAA , KE	
Kinematic Viscosity	ISO 3104		
at 40°C	mm ² /s	46	68
at 100°C	mm ² /s	6.7	9
Flash Point COC	°C ISO 2592	218	232
Pour Point	°C ISO 3016	-39	-39
Density at 15°C	kg/m ³ ISO 12185	859	862
Neutralisation number	mg KOH/g ASTM D 664 (TAN)		
Miscibility with R290		completely miscible with hydrocarbon based refrigerants	

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.