

# SHELL REFRIGERATION OIL S4 FR-F

SYNTHETIC REFRIGERATOR COMPRESSOR LUBRICANT

PREVIOUSLY SHELL CLAVUS R

DESIGNED TO MEET CHALLENGES

Shell Refrigeration Oil S4 FR-F is a synthetic lubricant with a polyolester base fluid. This lubricant has been developed for use with R134a and other environmentally acceptable HFC refrigerants.

## PERFORMANCE FEATURES

### EXTENDED MAINTENANCE INTERVALS

- Shell Refrigeration Oil S4 FR-F is a high-tech synthetic refrigerant oil based on polyolester fluids.
- Shell Refrigeration Oil S4 FR-F has excellent thermal and oxidation stability. This results in a high performance level of the oil over a long period of time.

### WEAR PROTECTION

- Helps to minimise wear in bearings and pistons, the most critical parts of a reciprocating type compressor.

## APPLICATIONS

### REFRIGERATOR COMPRESSORS

- Shell Refrigeration Oil S4 FR-F is recommended for use in open, semi-open and hermetic compressors operating with refrigerants such as R134a, R23, R404A, R407C, R507 and other blends of HFC refrigerants.
- Shell Refrigeration Oil S4 FR-F is compatible with elastomers commonly used in refrigeration systems.

### REFRIGERATOR PLANT DESIGN

- For applications of refrigeration and air-conditioning such as: industrial, refrigeration, refrigeration systems for food storage, mobile and stationary air-conditioning. When switching to new refrigerants and refrigerant oils the requirements of the refrigeration system manufacturer have to be followed.

## PRODUCT HANDLING

- The hygroscopic nature of the base fluid has to be taken into consideration and it is recommended that, when filling the system, air contact should be avoided as much as possible. Once an oil pack has been opened it must be sealed carefully after use and the remaining contents should be used within a few days.

## SPECIFICATIONS, APPROVALS AND RECOMMENDATIONS

### MEETS THE REQUIREMENTS OF:

- DIN 51503 KD.

## TYPICAL PHYSICAL CHARACTERISTICS

CHARACTERISTICS	68
Kinematic Viscosity (ISO 3104) @ 40°C mm <sup>2</sup> /s	66
@ 100°C mm <sup>2</sup> /s	8.8
Refrigerator Oil Group (DIN 51503)	KD
Density @ 15°C kg/m <sup>3</sup> (ISO 12185)	991
Flash Point °C (COC) (ISO 2592)	>230
Pour Point °C (ISO 3016)	-42
TAN (pH=11,0) mg KOH/g ASTM D664-97 mod.	<0.06
Floc-point with R134 °C (DIN 51351)	<-30
Miscibility with R134a 2% oil °C	-54/98
Miscibility with R134a 20% oil °C	-34/94
Miscibility with R12 °C	<60/>+100