



# Capella<sup>®</sup> WF

## Refrigeration Compressor Oil

High quality, essentially wax-free oil for the lubrication of refrigeration and air-conditioning compressors when refrigerants other than HFCs (hydrofluorocarbons) are used. Made from special, narrow-cut naphthenic base oils with an extremely low pour point and Freon Floc point.

### APPLICATIONS

- Reciprocating and rotary refrigeration compressors
- Air conditioning systems
- Refrigeration systems using chlorofluoro-carbons (CFCs)
- Refrigeration systems using ammonia, hydrochlorofluorocarbons (HCFCs), carbon dioxide, sulfur dioxide or ethylene chloride

For systems containing HFC refrigerants such as HFC 134a, Caltex Aurora or Caltex Capella HFC are recommended.

For large ammonia refrigeration systems, Caltex Ammonia Refrigeration Oil or Caltex Capella A may provide superior performance

Not recommended for use in breathing air compressors.

### PERFORMANCE STANDARDS

- British Standard BS 2626:1992, Type A Lubricants
- See overleaf for complete list of Performance Standards . . .

### KEY PROPERTIES

ISO Grade	32	46	68	100
Acid No., mg KOH/g	0.01	0.01	0.01	0.01
Flash Point, COC, °C	186	194	198	210
Freon Floc Point, °C	-60	-55	-50	-36
Pour Point, °C	-39	-36	-30	-24
Viscosity,				
mm <sup>2</sup> /s @ 40°C	31.0	46.8	65.0	93.0
mm <sup>2</sup> /s @ 100°C	4.5	5.6	6.7	8.3
Viscosity Index	9	20	24	32
Breakdown Voltage, KV min	40	40	40	40

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### BENEFITS

- ✦ **Reduced downtime**  
Very low pour point and Freon Floc point prevent loss of fluidity or formation of wax deposits, ensuring efficient evaporator operation, and cleanliness of equipment lines and refrigerant control devices. Excellent lubricity guards against wear of compressor components.
- ✦ **Prolonged compressor and seal life**  
Excellent thermal stability minimizes the formation of gum, varnish and sludge deposits.
- ✦ **Prolonged oil service life**  
Excellent oxidation resistance reduces oil thickening and deposit formation, ensuring extended oil change intervals.
- ✦ **Reduced costs**  
Suitability for use with a wide range of refrigerants minimizes inventory and reduces chance of misapplication.

### ENVIRONMENT, HEALTH and SAFETY

Information is available on this product in the Caltex Material Safety Data Sheet (MSDS) and Caltex Customer Safety Guide. Customers are encouraged to review this information, follow precautions and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit [www.caltexoils.com](http://www.caltexoils.com).



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## PERFORMANCE STANDARDS, continued

- APV – Baker (ISO VG 68)
- Bitzer Kuhlmaschinenbau (ISO VG 32, 46, 68)
- Bock
- Carrier (ISO VG 32)
- Copeland (ISO VG 32)
- Daimler-Chrysler (ISO VG 100)
- Gram (ISO VG 68, 100)
- Grasso (ISO VG 68)
- Linde
- McQuay (ISO VG 68)
- Mycom (ISO VG 32, 46)
- Sabroe (ISO VG 68)
- ABB Stal Refrigeration AB
- Sullair (ISO VG 68)
- Technofrigo Dell'Osto (ISO VG 68, 100)
- York (ISO VG 32, 68)

## SERVICE CONSIDERATIONS

Some transfer of the lubricating oil into the refrigerant circulation system is unavoidable and can limit the useable temperature range in reciprocating and rotary refrigeration compressors.

Certain refrigerants, for example ammonia and HCFCs, have low miscibility with oil and when these refrigerants are used, the lowest temperature at which the system can be operated is that at which the oil begins to solidify and congeal on the surfaces in the evaporator or around the expansion valve. When the refrigerant has a low miscibility with the oil, then the pour point of the lubricant is indicative of the critical temperature at which the oil begins to solidify in service, and congeal on the surfaces in the evaporator or around the expansion valve. Satisfactory service performance in such systems for an oil at temperatures below its pour point is dependent on the system having evaporator hot flush capability where hot compressor gases are periodically passed through the evaporator to melt any lubricant solids that may have formed. Caltex Capella WF 68 has been used at temperatures down to -50°C in such systems.

When the refrigerant has intermediate or high miscibility with oil, as in the case of CFCs, the refrigerant usually dilutes the lubricating oil sufficiently to prevent congealing. In this case, the temperature at which wax crystals precipitate from the mixture and begin to agglomerate becomes the critical temperature. Therefore, the minimum refrigeration system operating temperature at which reciprocating and rotary refrigeration compressor lubricants can be used is then determined by the lubricant's Freon Floc Point.

For large industrial ammonia refrigeration systems, superior performance may be obtained with Caltex Ammonia Refrigeration Oil which is a paraffinic product developed specifically for this application. For ammonia refrigeration systems with minimum evaporator temperatures of -60°C, Caltex Capella A is recommended.

In addition to good low temperature properties, dryness is essential in refrigeration oils. Caltex Capella WF is delivered with extremely low dissolved moisture levels, but any exposure of unsealed containers to air will result in rapid absorption of water. Ordering, storage and handling procedures must be such that exposure of the product to air and moisture is minimized.