

TECHNICAL DATA SHEET

NEXT 744-POE

CO₂ POE Refrigeration Lubricant · 744 Series

NEXT 744-POE is a polyol ester (POE) refrigeration lubricant engineered for CO₂ (R-744) systems where controlled lubricant-refrigerant miscibility is essential for reliable oil return and sustained heat exchanger performance. Its advanced anti-wear additive package provides the film strength required to protect compressor components under the extreme pressures and temperatures of transcritical operation.

With flash points from 276 to 300 °C (529 to 572 °F) and excellent carbon control, NEXT 744-POE is suited for both transcritical and subcritical CO₂ refrigeration as well as cascade systems in supermarket, cold storage, and industrial applications.



APPLICATIONS

- Transcritical CO₂ refrigeration
- Subcritical CO₂ refrigeration
- Cascade CO₂ refrigeration systems
- Supermarket and commercial refrigeration

GASES

- CO₂ (R-744)

BENEFITS

- Controlled CO₂-lubricant miscibility for reliable oil return
- Advanced anti-wear protection for extreme CO₂ pressures
- Very high flash points (276–300 °C / 529–572 °F)
- Excellent film strength under transcritical conditions
- Superior carbon and varnish control
- Extended service life

TECHNICAL SPECIFICATIONS

Typical properties

ISO Viscosity Grade	55	68	85	110	170
Viscosity @ 40 °C / 104 °F (cSt)	53.2	67	82.6	105	170
Viscosity @ 100 °C / 212 °F (cSt)	8.3	9.6	10.9	12.7	16.8
Viscosity Index	128	123	119	115	105
Density @ 15 °C / 59 °F (g/cm³)	0.99	0.98	0.98	0.98	0.97
Pour Point (°C / °F)	-48 / -54	-44 / -47	-42 / -44	-39 / -38	-33 / -27
Flash Point (°C / °F)	276 / 529	281 / 538	286 / 547	291 / 556	300 / 572
Copper Strip Corrosion (D130)	1a	1a	1a	1a	1a
Color (ASTM D1500)	<0.5	<0.5	<0.5	<0.5	<0.5

NOTE

Values in this Technical Data Sheet are typical and do not constitute a specification. Manufacturing specifications are available on request. Minimum operating temperatures are based on low-temperature viscosity and refrigerant miscibility data; consult NEXT Lubricants for operations below the pour point. Routine oil analysis is recommended to assess the in-service condition of the lubricant. Specifications are subject to change due to formulation or raw-material updates; always verify that this TDS is the most current version.