CITGO NORTH STAR® REFRIGERATION OILS

Date 1/09

DESCRIPTION: CITGO North Star Refrigeration Oils are naphthenic oils, blended for use in refrigeration compressors.

QUALITIES: Special properties to provide good refrigeration compressor lubrication include:

- Very light color
- Very low acid number
- Low pour and floc points
- Excellent foam resistance
- Good seal control
- Control stability and compatibility with refrigerants

APPLICATIONS: CITGO North Star Refrigeration Oils are recommended for use in refrigeration compressors and other low-temperature applications, including air conditioning systems. They are recommended for extremely low temperature applications such as those requiring floc points at 50°F or lower.

TYPICAL PROPERTIES:

CITGO NORTH STAR® REFRIGERATION OILS

GRADE	**32**	**54**	**100**
Material Code	643102001	643105001	643106001
Gravity, ASTM D 4052, °API	26.0	23.0	21.5
Density, lb/gal at 60°F	7.48	7.63	7.70
Flash Point, ASTM D 92, °F (°C), COC	370 (188)	392 (200)	432 (222)
Viscosity, ASTM D 445, cSt at 40°C	32.0	55	98
cSt at 100°C	4.7	6.7	9.4
ASTM D 2161, SUS at 100°F	167	287	517.5
SUS at 210°F	42	48.6	58
Viscosity Index, ASTM D 2270	33	63	60
Pour Point, ASTM D 97, °F (°C)	-54 (-48)	-44 (-42)	-38 (-39)
Floc Point, °F (°C)	-62 (-52)	-56 (-49)	-51 (-46)
Color, ASTM D 1500	L1.0	L1.5	2.5
Aniline Point, ASTM D 611, °F (°C)	178 (81)	181 (83)	206 (97)
Neutralization No., ASTM D 974	0.01	0.01	0.01
Foam Inhibitor	Yes	Yes	Yes
Foam, ASTM D 892, Sequence I	0-0	0-0	10-0
Sequence II	10-0	10-0	10-0
Sequence III	0-0	0-0	10-0
Dielectric Strength, ASTM D 877, KV	35	35	35
Water Content, ASTM D 1744, ppm	<30	<30	<30