ECOSE® R&O OILS

ECOSE® R&O Oils are industrial rust and oxidation (R&O) inhibited multipurpose lubricating oils, formulated from high-quality base oils and a proven additive system. These high performance turbine grade lubricants can be used as compressor oils, non-EP gear oils, general purpose circulating or bearing oils, and as non-antiwear hydraulic oils for appropriate applications.

FEATURES AND BENEFITS:

ECOSE® R&O Oils provide outstanding demulsibility, minimizing emulsions when coming into contact with water and other contaminants. They prevent oxidation to minimize sludge and varnish formations, and have good anti-foam characteristics. These products insure rust and corrosion protection in severe operating conditions while promoting fluid life and reduce system maintenance.

APPLICATIONS:

ECOSE® R&O Oils are used in a wide variety of industrial applications including steam turbines, air compressors, electric motors, gear reducers, spindle bearings, machine tools, sleeve bearings, heat transfer operations, and hydraulic circulating systems where EP or anti-wear type product is not required. These products meet the applicable requirements of Denison HF-1; DIN 51524 Part 1; General Electric GEK-32568, Solar Turbines ES9-224, Cincinnati Machine (formerly Cincinnati Milacron) P-38, P-54, P-55, P57; ASTM D 4304 Type I (ISO 32, 46, 68 & 100) and MIL-L 17672D. ***See typical properties chart on reverse side identifying the appropriate viscosity for these specifications***.

SELECTION:

ECOSE® R&O Oils are available in ten viscosity grades – **10, 22**, **32**, **46**, **68**, **100**, **150**, **220**, **320**, and **460**. See the Typical Properties chart on the reverse side for information on each viscosity grade. Follow equipment manufacturer recommendations for appropriate viscosity grade.

AVAILABILITY:

ECOSE® R&O Oils are available throughout Nu-Tier Brand's marketing area. Your Nu-Tier Brands representative can provide specific information. Need additional information? Call Nu-Tier Brands @ 1-877-771-LUBE (5823) or visit Nu-Tierbrands.com.

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ECOSE® R&O Oils – Typical Properties

ISO Viscosity Grade		**10**	**22**	**32**	**46**	**68**	**100**	**150**	**220**	**320**	**460**
Product Code	**ASTM**	534199	534201	534202	534204	534206	534208	534214	534217	534221	534223
Viscosity, cSt @ 40°C	D-445	10.1	20.6	32	45	65.9	97.0	145	215	316	455
Viscosity, cSt @ 100°C	D-445	2.6	4.1	5.2	6.7	8.6	11.2	14.8	18.8	24.3	30.2
Viscosity, SUS @ 100°F	D-2161	62	100.4	150.5	206	306	463	695	968	1482	2066
Viscosity, SUS @ 210°F	D-2161	35	39.8	43.3	47.8	54.4	63.5	76.0	93.4	119.3	147
Viscosity Index	D-2270	102	100	110	103	100	100	100	98	98	95
Color	D-1500	L1.0	L1.0	L1.0	L1.0	1.0	L1.5	2.0	L2.5	L3.0	4.0
Foam Test	D-892	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Pour Point, °F (°C)	D-5949	-40 (-40)	-20 (-29)	-20 (-29)	-20 (-29)	-20 (-29)	-10 (-23)	-5 (-21)	0 (-18)	10 (-12)	15 (-9)
Flash Point, COC, °F (°C)	D-92	365 (185)	385 (196)	410 (210)	430(218)	455 (235)	490(254)	505 (263)	530 (276)	535 (279)	580 (304)
Rust Test, A & B	D-665	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Oxidation Stability, hrs.	D-943	+5,000	4,000	4,000	3,500	3,500	2,000	1,500	1,000	1,000	1,000
AGMA Grade	D-664	--	--	--	1	2	3	4	5	6	7
API Gravity, 60°F	D-4052	33.8	33.5	33.0	32.3	31.6	30.7	29.7	28.7	27.9	27.3
Recommended For Use:											
Denison HF-1		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DIN 51524 Part 1		--	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cincinnati Machine		N/A	N/A	P-38	P-55	P-54	N/A	P-57	N/A	N/A	N/A
MIL-L-17672D		N/A	N/A	Yes	Yes	Yes	N/A	N/A	N/A	N/A	N/A
General Electric GEK-32568		N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Solar Turbines ES9-224		N/A	N/A	Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Performance											

Typical test data are average values only. Minor variations which do not affect product performance are to be expected in normal manufacturing.
N/A – specification not applicable to the viscosity grade