

Units Test Method*	°C in-house	ppm E1064-85	°C D92	g/ml D1298	°C D97	cSt D445	cSt D445	ISO Viscosity
Low Temp Miscibility 10% lube in R134a	-45	<40	240	0.995	-52	4.2	18.9	22
Water Content	-42	<40	258	0.977	-46	5.8	32.5	32
Flash Point (COC)	-36	<40	240	0.981	-40	5.6	31.2	32
	-37	<40	260	0.977	-46	7.1	45.3	46
	-26	<40	270	0.980	-39	9.3	65.5	68
	-28	<40	260	0.969	-28	11.3	96.5	100
Immiscible		<40	290	0.968	-25	17	170	170

*Test methods are ASTM standard methods unless otherwise stated

Emkarate™ RL Approval List

Industrial and Commercial
Compressor Manufacturers - HFC/HCFC Systems

MANUFACTURER	COMPRESSOR TYPE	APPROVED PRODUCT
BITZER	Reciprocating	RL 32H & 68H
	Screw	RL 170H
BLISSFIELD	Reciprocating	RL 68H
BOCK	Reciprocating	RL 22H, 32H, 46H, 68H & 100H
CARRIER	Centrifugal Chillers (17DA & 17EA)	RL 32H
	Externally Geared Centrifugal Chillers (17EX, 17FA & 17MPS)	RL 68H
CARRIER CARLYLE	Reciprocating	RL 68H
CARRIER TRANSICOLD	Reciprocating (Marine Containers)	RL 22H
COPELAND	Reciprocating & Scroll	RL 32-3MAF, 32CF & 22CF
DALIAN BINGSHAN	Reciprocating	RL 32H
	Screw	RL 170H
DANFOSS COMMERCIAL (MANEUROP)	Scroll (SZ, MFZ & LFZ)	RL 32H
	Reciprocating (LTZ & NTZ)	RL 32H
DORIN	Reciprocating	RL 22H, 32H, 46H & 68H
DUNHAM BUSH	Reciprocating	RL 32H & 68H
	Screw	RL 68H
FRASCOLD	Reciprocating	RL 32H & 68H
	Screw	RL 170H
FRIGOPOL	Reciprocating (60-DLB-13 to 80-DLB-30)	RL 32H
GRASSO (GEA)	Reciprocating	RL 68H & 100H
HARTFORD	Reciprocating	RL 32H & 68H
HANBELL	Screw compressors (RA, RB & V series)	RL 170H & 220H
HISPACOLD	Reciprocating	RL 68H
JIANGSU XUEMEI	Reciprocating	RL 22H & 32H
LOCKHEED MARTIN	Oil can be used to service Lockheed owned compressors	RL 68H
McQUAY (J&E Hall)	Centrifugal	RL 32H
	Screw	RL 68H, 68HB, 100H & 220H
PRESTCOLD	Reciprocating	RL 32-3MAF
REFCOMP	Reciprocating (SRC-F, SRC-M, SRC-L & SRC-P)	RL 32H & 68H
ROLTEC	Screw	RL 46H & 170H
ROYCE	Reciprocating	RL 32H
SABROE	Reciprocating	RL 32H, 46H & 68H
	Screw	RL 68H, 100H, 170H & 220H
TECUMSEH	Reciprocating	RL 22H
THERMOKING	Reciprocating	RL 32H
TRANE	Screw	RL 68H
	Scroll	RL 32HB
NATO MILITARY NSN	NSN 6850P4314-H	RL 32H
	NSN 9150-99-870-1432	RL 32HB
	NSN 9150-01-443-9390 & NSN 9150-01-443-9396	} RL 46H
	NSN 9150-01-435-1899, NSN 9150-01-410-8972 & NSN 9150-01-387-4469	
		} RL 68H
VATANU-COOL	Orbital Vane Rotary (OVR)	RL 220H
YANTAI MOON	Reciprocating	RL 32H

Uniqema recommends that users confirm with the original equipment manufacturer (OEM) which EMKARATE RL grade is qualified for use with a particular combination of compressor model, refrigerant and application.

For technical data and product selection visit:
www.emkarateRL.com

Emkarate is a trademark of Uniqema.

EU/LOFC/10-06/010/V04

uniqema

Emkarate™ RL Lubricants

High performance synthetic lubricants offering reliability and energy efficiency in over 500 million compressors world-wide



500 million
COMPRESSORS FILLED WORLDWIDE

www.emkarateRL.com

Creating your advantage in refrigeration lubricants

Uniqema is the world's leading supplier of approved synthetic lubricants to the refrigeration and air conditioning industry with the Emkarate™ RL polyol ester lubricants.

This year Emkarate™ RL celebrates its use in over 500 million compressors world-wide. This milestone reflects the performance advantages of Emkarate™ RL as well as the environmental gains this has allowed; the resultant threat to the ozone layer has been greatly diminished and efficiency savings have reduced greenhouse gas emissions by 25 million tonnes globally.

Emkarate™ RL's advanced design produces market leading performance providing;

- Superior wear protection for reliability
- Greater lubricity and improved energy efficiency
- Excellent performance in low temperature applications

As refrigeration technology moves forward there is an even greater demand for enhanced lubricant performance and reliability. Uniqema leads the way by continuing to invest in synthetic lubricant technology in order to meet the demands of the market and more importantly its customers.

Uniqema - leading the way in refrigeration lubricants

Emkarate™ RL Lubricants from Uniqema

The complete range of synthetic ester refrigeration lubricants from ISO 22 to ISO 170 viscosities.

The following table acts as a guide to selection of the appropriate lubricant.

Compressor	Emkarate™ RL					
	22	32	46	68	100	170
Reciprocating	Y	Y	Y	Y		
Rotary Vane			Y	Y	Y	Y
Scroll	Y	Y	Y	Y		
Centrifugal	Y	Y	Y	Y	Y	Y
Screw			Y	Y	Y	Y

Whether you need an approved synthetic lubricant for refrigeration (ranging all the way up to very large commercial and industrial refrigeration systems), or air conditioning (residential, commercial or transport), Emkarate™ RL is the only name you need to know.

The range of Emkarate™ RL lubricants provides quality, reliability, performance and peace of mind, both for original fill oils, servicing oils, and during retrofits.

Today more compressor manufacturers have given their "stamp of approval" by using Uniqema compressor lubricant products rather than those of any other manufacturer.

Emkarate™ RL

Head and shoulders above the competition

