SUNISO™

WORLD-LEADING REFRIGERATION LUBRICANTS



RIGHT FROM THE START.



In 1933, Suniso® set the standard in refrigeration lubricants. Specially formulated to provide exceptional stability, maximize service life and deliver trouble-free performance, there's a reason why Suniso has been the world's leading refrigeration lubricants brand for more than 90 years.

Recognized globally and trusted by original equipment manufacturers (OEMs) and end users alike, the Suniso product range has evolved to match the requirements of modern refrigeration systems and changes in lubricating base oil technology.

We proud to exclusively market and distribute Suniso products with an unwavering commitment to quality, consistency and availability.

Let's continue building on the Suniso legacy—together.

SUNISO



In 1933,

the Suniso brand is launched, setting the standard in refrigeration lubricants.

In 1968,

Suniso GS is launched, marking a pivotal milestone as the new “Grade Standard” for the industry.

Today,

Suniso products are marketed and distributed exclusively by us, giving you access to decades of specialized lubricants expertise, a reliable global supply chain and a commitment to your refrigeration lubricant needs unlike any other.

SUNISO™ SL

Synthetic Refrigeration Lubricants



Introduction

Suniso® SL oils are high-performance, synthetic refrigeration lubricants formulated for optimal performance of compressors using HFC and HFC/HFO refrigerant blends. Manufactured with specially engineered polyol esters (POE), Suniso SL lubricants ensure superior miscibility and efficient oil return throughout the system, from the evaporator to the compressor. In addition, Suniso SL lubricants retain viscosity very well with the refrigerant dissolved, offering maximum protection to compressor bearings. Suniso SL lubricants deliver exceptional thermal stability, making them suitable for applications ranging from low temperature refrigeration systems to high temperature heat pumps.

Applications

Suniso SL lubricants are recommended for use in refrigeration, air-conditioning and heat pump systems utilizing ozone-friendly, chlorine-free refrigerants. Compatible with most HFC and HFC/HFO refrigerant blends, Suniso SL lubricants exhibit exceptional miscibility even at extremely low temperatures. They are suitable for a wide range of compressor types, including reciprocating, screw, centrifugal and scroll compressors found in applications such as petrochemical, cold storage, trucking, supermarkets and home air-conditioning systems.

Features & Benefits:

- **Miscibility with HFC and HFC/HFO refrigerant blends**
- **Optimal viscosity retention**
- **High thermal stability**
- **DIN 51503 KD**
  ISO 6743-3 ISO-L-DRD

Compatibility

Most HFC refrigerants such as R-125, R-134a, R-143a, R-152a, R-404A, R-407C, R-410A, R-422a, R-422d, R-427a, R-507A

Most HFC/HFO blends such as R-448A, R-449A, R-449C, R-452A, R-452B, R-454A, R-454B, R-454C, R-507A, R-513A

Incompatible with R-22 (HCFC), R-32 (HFC), R-717 (NH_3), R-744 (CO_2)

Pack Sizes

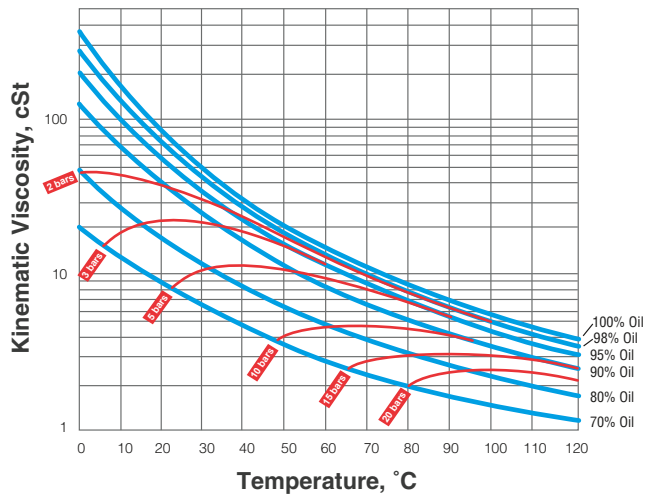
1 LITRE *4 LITRES* *20 LITRES* *205 LITRES*

Typical Performance Data

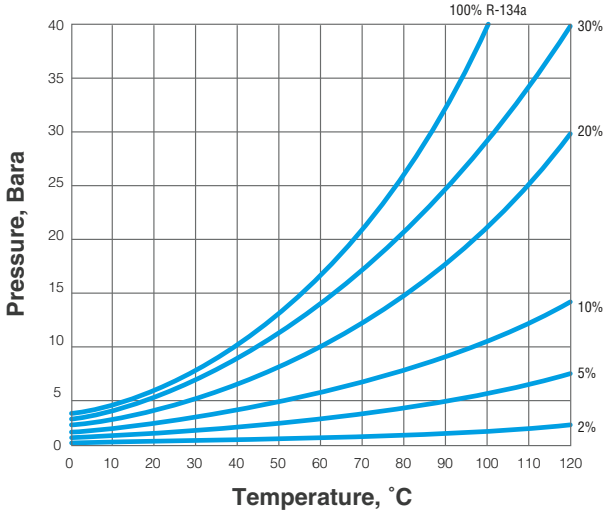
Property	ASTM Method	SL 22	SL 32	SL 46	SL 68	SL 100	SL 170	SL 220
Density @ 15°C, kg/L	D4052	0.993	0.993	0.981	0.973	0.966	0.969	0.966
Viscosity @ 40°C, cSt	D445	23.5	32.0	46.1	65.0	100.0	167.8	217.0
Viscosity @ 100°C, cSt	D445	4.4	5.6	6.9	8.3	10.9	15.3	17.9
Moisture, ppm	D6304	<100	<100	<100	<100	<100	<100	<100
Flash Point, °C / °F	D92	252 / 486	250 / 482	253 / 487	255 / 491	270 / 518	279 / 534	255 / 491
Pour Point, °C / °F	D5950	-57 / -71	-54 / -65	-48 / -54	-36 / -33	-33 / -27	-27 / -17	-30 / -22
Acid Value, mg KOH/gm	D974 (Modified)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

The values quoted above are typical of normal production. They do not constitute a specification.

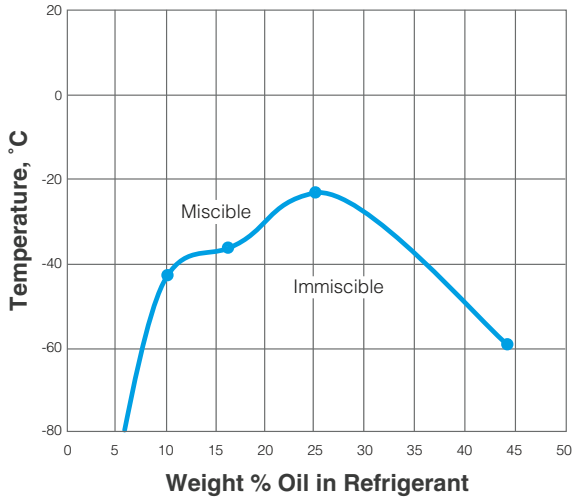
Viscosity vs. Temperature of Suniso SL 32 with R-134a



Dilution Chart of Suniso SL 32 with R-134a



Miscibility Chart of Suniso SL 32 with R-134a



SUNISO™ GS

Mineral Refrigeration Lubricants



Introduction

Suniso® GS oils are premium quality, highly-refined mineral refrigeration lubricants designed to lubricate refrigeration and air-conditioning compressors using CFC and HCFC refrigerants. Suniso GS lubricants are known for their low wax content, low pour point and high dielectric strength. For over 50 years, Suniso GS lubricants have helped to ensure trouble-free operation and maximum service life with excellent chemical and thermal stability.

Applications

Suniso GS lubricants are recommended for use in consumer and commercial refrigeration and air-conditioning systems charged with traditional and natural refrigerants. Suniso GS lubricants are ideally suited for low-temperature systems where evaporator temperatures are as low as -42°C/-44°F. Suniso GS lubricants are designed for use with CFC and HCFC refrigerants. They are also suitable for use with natural-type refrigerants including ammonia, isobutane and propane.

Features & Benefits:

- **Low wax content and low pour point**
- **High dielectric strength/ good electrical insulating properties**
- **Excellent chemical stability**
- **High thermal stability**

Compatibility

All CFC refrigerants such as
R-11, R-12, R-13, R-113, R-114, R-115

All HCFC refrigerants such as
R-21, R-22, R-123, R-124, R-141b, R-142b, R-502

Ammonia: R-717

Isobutane: R-600a

Propane: R-290

Pack Sizes

4 LITRES *20 LITRES* *205 LITRES*

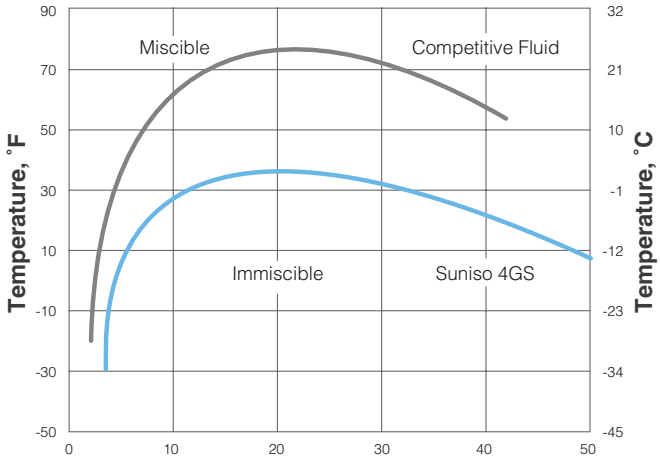
SUNISO™

Typical Performance Data

Property	ASTM Method	3GS	4GS	5GS
Density @ 15°C, kg/L	D4052	0.910	0.916	0.920
Viscosity @ 40°C, cSt	D445	30	55	100
Viscosity @ 100°C, cSt	D445	4.4	5.9	8.4
Flash Point, °C / °F	D92	178 / 352	184 / 364	213 / 415
Pour Point, °C / °F	D97	-48 / -54	-42 / -44	-33 / -27
Floc Point, °C / °F	ASHRAE 86	-58 / -72	-54 / -66	-45 / -49
Dielectric Strength, kV	D877	37	40	38

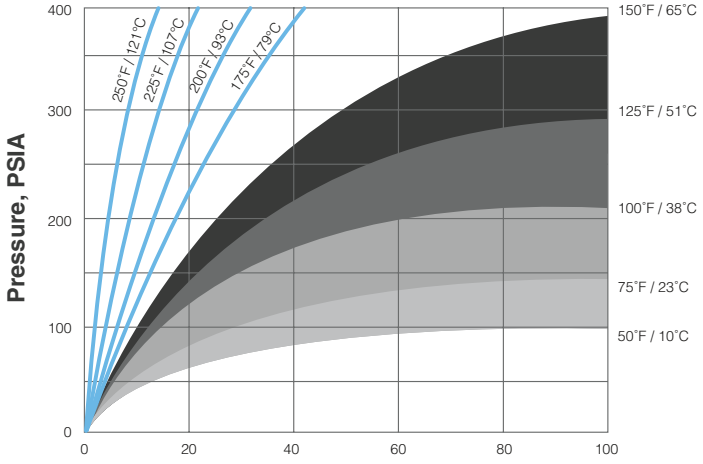
The values quoted above are typical of normal production. They do not constitute a specification.

Miscibility Chart of Suniso 4GS with R-22



Weight % Oil in Refrigerant

Solubility of R-22 in Suniso 4GS as a Function of Temperature and Pressure



Weight % of Refrigerant in Oil

OEM Approvals for Suniso GS

AMERICOLD
ARCELIK (BEKO)
ASPERA
BORG WARNER (YORK)
BRISTOL COMPRESSORS
CARLYLE (UTC)
CARRIER (UTC)
COPELAND
DAEWOO
DANFOSS
DORIN
ELECTROLUX
EMBRACO
EMERSON QUIET-KOOL
FORD
FRICK
FRIGIDAIRE
GENERAL ELECTRIC
GOLDSTAR
HARTFORD COMPRESSORS (DUNHAM-BUSH)
HEIL QUAKER (WHIRLPOOL)
HITACHI
LAMANA
LENNOX
MATSUSHITA (PANASONIC)
MAYTAG
MURRAY
MYCOM
NECCHI
SAMSUNG
SANDEN
SANYO
TECUMSEH
THERMOKING
TOSHIBA
TRANE
WHIRLPOOL
YORK INTERNATIONAL
ZANUSSI

SUNISO™ 4HT

Ammonia Refrigeration Lubricant



Introduction

Suniso® 4HT is a hydrotreated refrigeration lubricant designed to lubricate commercial and industrial refrigeration compressors using ammonia (R-717) refrigerant. Suniso 4HT offers low solubility in ammonia, which improves system efficiency and performance. In addition, Suniso 4HT provides low oil volatility, which reduces lubricant consumption and maintenance costs.

Applications

Suniso 4HT is designed for use in commercial and industrial refrigeration systems charged with ammonia (R-717) refrigerant. Ideally suited for low-temperature systems where evaporator temperatures are as low as -36°C / -33°F, Suniso 4HT is an excellent option for use in industries such as cold storage warehouses, food and beverage processing, flash freezing, ice rinks, etc. Suniso 4HT is neutral toward common seal materials. If converting from a naphthenic lubricant, please consult a Petro-Canada Lubricants Technical Service Advisor.

Food Industry Approved - NSF H2 registered

Acceptable for use in food processing facilities where there is no possibility of food contact.

Features & Benefits:

- **Low oil volatility**
- **Low solubility in ammonia**
- **Excellent thermal stability**
- **Low wax content & high viscosity index**
- **Seal compatibility**

Compatibility

Suniso 4HT is designed for use in commercial and industrial refrigeration systems charged with ammonia (R-717) refrigerant.

Pack Sizes

20 LITRES *205 LITRES*

SUNISO™ 4SA

Ammonia Refrigeration Lubricant



Introduction

Suniso® 4SA is a highly refined naphthenic refrigeration lubricant designed to lubricate refrigeration compressors using ammonia (R-717) refrigerant. Suniso 4SA offers low wax content and a low pour point, delivering excellent low temperature performance with no wax deposits to plug the system.

Applications

Suniso 4SA is designed for use in commercial and industrial refrigeration systems charged with ammonia (R-717) refrigerant. Suniso 4SA is ideally suited for low temperature systems where evaporator temperatures are as low as -36°C / -33°F. Suniso 4SA is based on naphthenic base oils, which provide mild seal swell.

Features & Benefits:

- **Low wax content & low pour point**
- **Excellent chemical stability**
- **High thermal stability**
- **Seal compatibility**

Compatibility

Suniso 4SA is designed for use in commercial and industrial refrigeration systems charged with ammonia (R-717) refrigerant.

Pack Sizes

205 LITRES

Typical Performance Data

Property	ASTM Method	Suniso 4HT	Suniso 4SA
Density @ 15°C, kg/L	D4052	0.87	0.91
Viscosity @ 40°C, cSt	D445	60	56
Viscosity @ 100°C, cSt	D445	8.1	6.4
Flash Point, °C / °F	D92	230 / 446	180 / 356
Pour Point, °C / °F	D5950	-39 / -38	-39 / -38
Minimum Evaporator Temperature °C / °F		-36 / -33	-36 / -33

The values quoted above are typical of normal production. They do not constitute a specification.

Refrigeration Lubricant Range

Suniso® GS

Suniso GS oils are premium quality, highly-refined mineral refrigeration lubricants designed to lubricate refrigeration and air-conditioning compressors using CFC and HCFC refrigerants.

N°	Lubricant	Technology	Viscosity, cSt @ 40°C
A	Suniso 3GS	Mineral	32
B	Suniso 4GS	Mineral	55
C	Suniso 5GS	Mineral	100

Suniso® SL

Suniso SL oils are high-performance, synthetic refrigeration lubricants formulated for optimal performance of compressors using HFC and HFC/HFO refrigerant blends.

N°	Lubricant	Technology	Viscosity, cSt @ 40°C
D	Suniso SL 22	POE	22
E	Suniso SL 32	POE	32
F	Suniso SL 46	POE	46
G	Suniso SL 68	POE	68
H	Suniso SL 100	POE	100
I	Suniso SL 170	POE	170
J	Suniso SL 220	POE	200

Suniso® 4SA

Suniso 4SA is a highly refined naphthenic refrigeration lubricant designed to lubricate refrigeration compressors using ammonia (R-717) refrigerant.

N°	Lubricant	Technology	Viscosity, cSt @ 40°C
K	Suniso 4SA	Mineral	56

Suniso® 4HT

Suniso 4HT is a hydrotreated refrigeration lubricant designed to lubricate commercial and industrial refrigeration compressors using ammonia (R-717) refrigerant.

N°	Lubricant	Technology	Viscosity, cSt @ 40°C
L*	Suniso 4HT	HT Mineral	60

How To Use This Refrigeration Lubricant Selector

1. Obtain/confirm the following information on the application:
   a. Refrigerant Fluid in use (ASHRAE designation)
   b. Minimum Evaporator Temperature in °C/°F
   c. Compressor Type

2. To identify the **Suniso** product(s) suitable for use in your compressor application, refer to the row that corresponds to the refrigerant fluid and the minimum evaporator temperature.

3. For further clarification or assistance, please contact a Petro-Canada Lubricants Technical Service Advisor or contact us at https://sunisolubricants.com/contact-us.

**Suniso 4HT is neutral toward common seal materials. If converting from a naphthenic lubricant, please consult a Petro-Canada Lubricants Technical Service Advisor.*

Refrigeration Lub

ASHRAE Name
R12
R502
R22
R22
R123
R124
R290
R600/600a
R717
R717
R23
R134a
R134a
R404a
R404a
R407c
R410a
R410a
R410b
R417a
R422a (Isceon M079)
R422a (Isceon M079)
R422d (Isceon M029)
R422d (Isceon M029)
R427a (FX 100)
R427a (FX 100)
R507/507a
R507/507a
R513A
R513A

ricant Selector

REFRIGERANT FLUID		MINIMUM EVAPORATOR TEMPERATURE (°C/°F)	COMPRESSOR TYPE			
Type	Transition or Substitute of		Piston	Screw	Centrifugal	Scroll
CFC		-40/-40	A	B		
CFC/HCFC Blend		-50/-58	A	B		
HCFC		-25/-13	A	B	B	
HCFC		-50/-58	A		B	
HCFC	R11	0/32			B	
HCFC	R114	0/32	B			
C_3H_8 (Propane)		-30/-22	B			
Butane & Iso But.		-30/-22	B			
NH_3 (Ammonia)		-36/-33	L or K or B	L or K or B	L or K or B	
NH_3 (Ammonia)		-50/-58			L	
HFC		-100/-148	D			
HFC	R12	-20/-4	E	I or J	G	
HFC	R12	-30/-22	D	H	G	
HFC	R502	-40/-40	E	I	G	
HFC	R502	-50/-58	D	H	G	
HFC	R22	0/32	G	I or J		
HFC		-25/-13	E	I or J	G	
HFC		-45/-49	D	H	G	
HFC		-25/-13	E	I or J	G	
HFC	R22	-15/5	G	I or J	G	
HFC	R22	-25/-13	E	I or J	G	E
HFC	R22	-45/-49	D	H	G	E
HFC	R22	-25/-13	E	I or J	G	E
HFC	R22	-45/-49	D	H	G	E
HFC	R22	-20/-4	F	I or J	G	E
HFC	R22	-40/-40	D	H	G	E
HFC		-20/-4	F	I or J	G	
HFC		-40/-40	D	H	G	
HFC/HFO blend		-20/-4	E	I or J	G	
HFC//HFO blend		-30/-22	D	H	G	

This product selector will help you determine the most suitable lubricant for your refrigeration compressor based on refrigerant type, minimum evaporator temperature and type of compressor. Differences in end user operating, system conditions and previously used oil may require different lubricants or viscosity grades than those listed. Consult your compressor OEM, equipment builder or technical service representative to confirm product and viscosity recommendations. When switching between products and/or brands, always ensure a thorough flushing of your system. For compressor and/or refrigerant types not listed, please contact a Petro-Canada Lubricants Technical Service Advisor.

For the refrigerants listed below, we would like to understand your request better. Please contact a Petro-Canada Lubricants Technical Service Advisor to determine the correct product recommendation.

CFC: R11, R13, R113, R114, R115

HCFC: R21, R141b, R142b, R401, R402, R408, R409, and R502

C02: R744

Propylene: R1270

HFC: R125, R143a, R152a

HFC/HFO blend: R448A, R449A, R449C, R452A, R452B, R454A, R454B, R454C



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