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REFRIGERANTS

HYDROCARBONS



014R290

R-290 (PROPANE)

R-290:

Propane (a hydrocarbon) used as the primary refrigerant in small, stand alone refrigeration appliances such as drink machines and display coolers. Propane is flammable and therefore is only

allowed to be used in new equipment that has been specially designed to reduce the risk of fire. In applications for which it is approved, charge size is limited.

Follow all OEM guidelines for safe charging, and service practices.



Part No.	Description	Container Size (Lbs.)
014R290	Propane	14 Oz Cylinder



3R170

HYDROCARBONS

The low stage of a cascade system typically operates below -80°F. At these temperatures, standard refrigeration oils may begin to gum-up and lose their ability to flow around the sytem. Systems that run short periods of time, or

cycle through warmer temperatures, may be able to keep the oil returning to the compressor; however, systems that run longer stretches of time at cold temperatures need to add hydrocarbons to thin the oil and provide consistent oil return. In some cases, the hydrocarbons are used as the low stage refrigerant.

National provides a variety of hydrocarbons in small quantities to be used for addition to very low temperature systems. Larger quantities can be specially ordered.



Part No.	Description	Container Size (Lbs.)
3R170	R-170 (Ethane)	3 Lbs. Cylinder
004R170	R-170 (Ethane)	4 Oz. Cylinder
016R600	R-600 (n-Butane)	16 Oz. Cylinder
014r600a	R-600a (iso-Butane)	14.8 Oz Aerosol
016R600A	R-600a (iso-Butane)	16 Oz. Cylinder
004R1150	R-1150 (Ethylene)	4 Oz. Cylinder
016RPENTANE	Pentane, Liquid	16 Oz

HFO REFRIGERANTS

R-1234YF

R-1234yf

belongs to a new family of HFOs (hydro-fluoro-olefins) that have a low GWP. R-1234yf is intended for automotive air conditioning systems, some other R-134a applications, and it is a component in some HFC blends to help lower the overall GWP. This product is mildly flammable, but has been deemed safe by itself in new automotive systems. It should not be used to retrofit existing R-134a equipment.



Part No.	Container Size (Lbs.)
10R1234YF	10 Lb Cylinder
008R1234YF	8 Oz.



10R1234ZE

R-1234ZE

R-1234ze

belongs to a new family of HFOs (hydro-fluoro-olefins) that have a low GWP. R-1234ze can be used in air conditioning chillers, heat pumps, and some other R-134a applications. It is also included as

a component in some HFC blends to help lower the overall GWP. This product is mildly flammable and it should not be used to retrofit existing R-134a equipment.



Part No.	Container Size (Lbs.)
10R1234ZE	10 Lb Cylinder
110R1234ZE	110 Lb Cylinder



10R1233ZD

R-1233ZD

R-1233zd belongs to a new family of HFOs (hydro-fluoro-olefins) that have low GWP. R-1233zd is used in low pressure centrifugal chillers for large air conditioning installations. This product is

non-flammable and should be used only in new equipment (does not match properties of R-11 or R-123).



Part No.	Container Size (Lbs.)
10R1233ZD	10 Lb Cylinder
100R1233ZD	100 Lb Cylinder



25R450A

R-450A

R450A

Application: Medium and low temp refrigeration applications, appliances. Retrofitting R-12 or blends used to previously retrofit R-12 systems

Performance: Similar capacity and efficiency to R-12. Higher pressures, similar to R-401A and R-409A

Lubricant: R-450A requires polyolester (POE) lubricant. Follow manufacturer's recommendations for changing mineral oil to POE



Part No.	Container Size (Lbs.)
25R450A	25 Lb Cylinder



30R513A

R-513A

R513A

Application: Medium temperature refrigeration, AC chillers, heat pumps

POE lubricant, same as R134a

R513A has a slightly higher capacity compared to R134a. It

should be a close match to the HCFC based R12 retrofit blends. System pressures will be slightly higher than R134a. There is no temperature glide to compensate for, but the different pressure/temperature relationship may require resetting of pressure-based controls.



Part No.	Container Size (Lbs.)
30R513A	30 Lb Cylinder
125R513A	125 Lb Cylinder
1000R513A	1000 Lb Cylinder

HFC/HFO REFRIGERANTS



25R448A

R-448A

R-448A: This blend combines HFC and HFO components that produces a lower GWP than traditional HFC products. R-448A is intended for use in low and medium temperature refrigeration systems

to replace R-404A or R-507. It can also be used to retrofit R-22 systems.



Part No.	Container Size (Lbs.)
25R448A	25 Lb Cylinder
100R448A	100 Lb Cylinder
850R448A	800 Lb Cylinder



25R449A

R-449A

R-449A: This blend combines HFC and HFO components that produces a lower GWP than traditional HFC products. R-448A is intended for use in low and medium temperature refrigeration systems

to replace R-404A or R-507. It can also be used to retrofit R-22 systems.



Part No.	Container Size (Lbs.)
25R449A	25 Lb Cylinder
110R449A	110 Lb Cylinder
900R449A	900 Lb Cylinder

R-452A

R-452A: This blend combines HFC and HFO components that results in a lower GWP than other HFC products. R-452A can be used in certain low and medium temperature refrigeration and transport refrigeration systems to replace R-404A or R-507. Refer to EPAs SNAP website for approved uses of R-452A.



Part No.	Container Size (Lbs.)
25R452A	25 Lb Cylinder
100R452A	100 Lb Cylinder

HFC REFRIGERANTS



30R134A

R-134A

This HFC refrigerant has been the standard OEM choice for household appliances, small self-contained refrigeration units, very large chillers, and automotive air conditioning. It is also being used as the

heat transfer fluid in secondary loop systems. R-134a is a component in many refrigerant blends on the market, including the new lower GWP blends. Application Temperature Range: R-134a performance suffers at lower evaporator temperatures. In general it is not applied at temperatures below -10°F, and it is not necessarily the most economical overall choice in some other applications. Traditional R-12 type applications have adopted several products as alternatives, including R-134a, R-22, R-404A/R-507, and numerous retrofit blends. Lubrication: R-134a requires polyolester (POE) lubricants, primarily for their ability to mix with HFC refrigerants. Traditional mineral oils and alkylbenzene do not mix with HFCs and will cause compressor failures. In addition, automotive air conditioning systems may also use polyalkylene glycol (PAG) lubricants (not typically seen in stationary equipment). Both POEs and PAGs will absorb moisture, and hold onto it, to a much greater extent than traditional lubricants. The moisture will promote reactions in the lubricant as well as the usual problems associated with water (corrosion, acid formation, etc.). The best way to dry a wet HFC system is to use a filter drier - run the system and change the drier - instead of relying on evacuation to clear the water.



National Refrigerants, Inc.

Part No.	Container Size (Lbs.)
30R134A ¹	30 Lb Cylinder
125R134A ²	125 Lb Cylinder
1000R134A ²	1000 Lb Cylinder
1750R134A ²	1750 Lb Cylinder

¹ stationary cylinder ² returnable cylinder



5R23

R-23

R-23: Used in very low temperature refrigeration systems, typically on the low stage of a multi-stage system. Has properties similar to R-13 and can be used to replace R-13 in an existing system. R-23 has higher discharge temperatures

than R-13, however, and equipment which is not designed to take this into account may suffer related failures. Polyolester (POE) lubricants should be used, and it may still be necessary to charge hydrocarbon oil additives to ensure proper oil return. Check with OEM for specific oil and charging recommendations.



National Refrigerants, Inc.

Part No.	Container Size (Lbs.)
5R23	5 Lb Cylinder
9R23	9 Lb Cylinder
20R23	20 Lb Cylinder
70R23	70 Lb Cylinder



24R404A

R-404A

R-404A: Used in low and medium temperature refrigeration. This blend has been the standard OEM choice for commercial and industrial low temperature refrigeration. Recent SNAP regulations impose use restrictions

in certain applications. Check EPA's website for SNAP approvals and restrictions for this refrigerant in specific applications. POE lubricant is required.



National Refrigerants, Inc.

Part No.	Description	Container Size (Lbs.)
24R404A	R404A refrigerant, HFC, 24 lb. cylinder	24 Lb Cylinder
100R404A ¹	R404A refrigerant, HFC, 100 lb. returnable cylinder	100 Lb Cylinder
800R404A ¹	R404A refrigerant, HFC, 100 lb. returnable cylinder	800 Lb Cylinder
1300R404A ¹	R404A refrigerant, HFC, 1,300 lb. returnable cylinder	1300 Lb Cylinder
24R404ANRI	RECLAIMED R-404A 24LB CYLINDER	24 Lb Cylinder

¹ returnable cylinder



25R407A

R-407A

R-407A: Has properties very similar to R-22 in refrigeration equipment. It has become a popular choice in the supermarket and refrigeration markets for retrofitting as well as new installations. Operating pressure/temperature in the

evaporator, run-time capacity, and flow characteristics through tubing and valves make this blend the closest property match to R-22 at lower evaporator temperatures.



Part No.	Container Size (Lbs.)
25R407A	25 Lb Cylinder
100R407A	100 Lb Cylinder
925R407A	925 Lb Cylinder



25R407C

R-407C

R-407C: Has properties very similar to R-22 in air conditioning equipment and in medium temperature refrigeration. Operating pressure/temperature in the evaporator, run-time capacity, and flow characteristics through

tubing and valves make this blend the closest property match to R-22 for retrofitting at AC conditions.



Part No.	Container Size (Lbs.)
25R407C	25 Lb Cylinder
115R407C ¹	115 Lb Cylinder
925R407C ¹	925 Lb Cylinder

¹ returnable cylinder



25R410A

R-410A

R-410A: Used in new air conditioning and heat pump equipment. The components nearly form an azeotrope, which means it has extremely low temperature glide and almost no fractionation potential. This blend has about 60%

higher pressure than R-22 in air conditioning applications, and therefore is only allowed to be used only in new equipment specifically designed to handle the pressure. Systems designed for R-410A will have smaller components (heat exchangers, compressor, etc.) to perform the same cooling job compared to R-22. POE lubricant is required.



Part No.	Container Size (Lbs.)
25R410A	25 Lb Cylinder
100R410A ¹	100 Lb Cylinder
850R410A	850 Lb Cylinder

¹ returnable cylinder



25R417C

R-417C

An HFC-based retrofit blend for R-12 and all HCFC retrofit blends intended for R-12 applications (for example, R-414B). This second-generation blend contains a hydrocarbon additive and therefore can be

used with existing mineral oil or alkylbenzene.



Part No.	Container Size (Lbs.)
25R417C	25 Lb Cylinder



25R422B

R-422B

R-422B: A retrofit blend that is designed to match R-22 in air conditioning applications. There is a slight reduction in capacity which would result in slightly longer run times. Systems that were previously retrofitted to

R-417A can operate with a replacement charge of R-422B. The hydrocarbon component in R-422B helps promote oil return in systems containing mineral oil or alkylbenzene. Although HFC refrigerants won't mix with these oils, the hydrocarbon component thins the mineral oil and keeps it moving around the loop. More complicated piping arrangements or large hold-up volumes may require the addition of POE.



Part No.	Container Size (Lbs.)
25R422B	25 Lb Cylinder
110R422B	110 Lb Cylinder
25R422BNRI	25 Lb Cylinder



25R422D

R-422D

R-422D: A retrofit blend that is designed to match R-22 in refrigeration applications. There is a reduction in capacity which would result in longer run times. There may also be excessive pressure drop in long piping runs

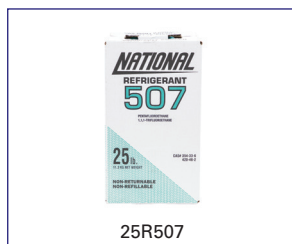
which may limit capacity further. The hydrocarbon component in R-422D helps promote oil return in systems containing mineral oil or alkylbenzene. Although HFC refrigerants won't mix with these oils, the hydrocarbon component thins the oil and keeps it moving around the loop. More complicated piping arrangements or large hold-up volumes may require the component of POE.



Part No.	Container Size (Lbs.)
25R422D	25 Lb Cylinder
110R422D	110 Lb Cylinder
25R422DNRI	25 Lb Cylinder

HFC REFRIGERANTS

HCFC REFRIGERANTS



R-507

R-507: Used in low and medium temperature refrigeration, it can be used in any system specified to use R-404A. R-507 was accepted by OEMs as an alternative choice to R-404A for commercial and industrial low temperature

refrigeration. Recent SNAP regulations impose use restrictions in certain applications. Check EPA's website for SNAP approvals and restrictions for this refrigerant in specific applications. POE lubricant is required.



Part No.	Container Size (Lbs.)
25R507	25 Lb Cylinder
100R507 ¹	100 Lb Cylinder
800R507 ¹	800 Lb Cylinder
1400R507 ¹	1400 Lb Cylinder
25R507NRI	25 Lb Cylinder

¹ returnable cylinder



R-508B

R-508B: Used in very-low-temperature refrigeration systems, typically the low stage of a multi-stage system. R-508B has properties similar to R-503 and can be used to replace either R-13 or R-503 in an existing

system. The discharge temperature does not increase significantly compared to R-23. POE lubricants should be used, and it may still be necessary to charge hydrocarbon oil additives to ensure proper oil return. Check with OEM for specific oil and charging recommendations.



Part No.	Container Size (Lbs.)
5R508B	5 Lb Cylinder
10R508B ¹	10 Lb Cylinder
20R508B ¹	20 Lb Cylinder
70R508B ¹	70 Lb Cylinder

¹ returnable cylinder



R-123

R-123: Developed to replace R-11 in low pressure centrifugal chillers. New R-123 equipment has been engineered with the correct materials of construction and sized properly for the intended application. Retrofitting existing

R-11 chillers to R-123 may require replacement of seals, gaskets, and other system components to obtain the correct operation conditions and prevent leaks.

The ASHRAE safety rating for R-123 is B1, which indicates that lower levels for personal exposure are allowed in normal daily operation and service conditions. Extra precautions and machinery room requirements must be observed (specific requirements are spelled out in ASHRAE Standard 15, Safety Code for Mechanical Refrigeration).

An EPA certification card is required to purchase CFC and HCFC refrigerants.



Part No.	Container Size (Lbs.)
100R123	100 Lb Drum
200R123	200 Lb Drum
650R123	650 Lb Drum



R-124

R-124: Used in refrigeration blends, primarily those used for R-12 type applications. Also used by itself to replace R-114 in chillers or high ambient air conditioning applications, and for sterilant gas formulations.

An EPA certification card is required to purchase CFC and HCFC refrigerants.



Part No.	Container Size (Lbs.)
30R124	30 Lb Drum
145R124 ¹	145 Lb Cylinder

¹ returnable cylinder



30R22

R-22

R-22: The predominant refrigerant installed in residential and commercial air conditioning and some very large centrifugal chillers for air conditioning and industrial process cooling. It has also been installed more in refrigeration

since the phaseout of CFCs, both as a pure refrigerant and in blends. R-22 can no longer be used in new equipment, but available product can be used to service existing systems.

An EPA certification card is required to purchase CFC and HCFC refrigerants.



Part No.	Container Size (Lbs.)
30R22	30 Lb Cylinder
125R22 ¹	125 Lb Cylinder
1000R22 ¹	1000 Lb Cylinder
1750R22 ¹	1750 Lb Cylinder

¹ returnable cylinder



30R401A

R-401A

R-401A: A retrofit blend for R-12 refrigeration systems. The pressure and system capacity match R-12 when the blend is running in a 10°F to 20°F evaporator, and there is typically an 8°F temperature glide in the

evaporator. Applications: direct expansion refrigeration and air conditioning systems designed for R-12 or R-500; good success in any size system, minor adjustment of controls needed.

Discharge pressure increases compared to R-12, also slight increase in discharge temperature, however the increases are not as severe as some other retrofit blends. There is a drop in capacity at lower temperatures. R-152a content, an HFC, hurts the miscibility with mineral oil. It is recommended to change some of the oil to alkylbenzene unless the system is small and running at higher evaporator temperatures.



Part No.	Container Size (Lbs.)
30R401A	30 Lb Cylinder
125R401A ¹	125 Lb Cylinder

¹ returnable cylinder



30R401B

R-401B

R-401B: Similar to R-401A except higher in R-22 content. This blend has higher capacity at lower temperatures (matches R-12 around -30°F), and also provides a closer match to R-500 at air

conditioning temperatures.



Part No.	Container Size (Lbs.)
30R401B	30 Lb Cylinder



27R402A

R-402A

R-402A: This blend is formulated to match R-502 in medium to low temperature ranges and does not significantly increase discharge temperature in R-502 retrofit situations. Discharge pressure, however, can increase from 25 to

40 psi over pressures seen with R-502. Although propane was included to improve oil circulation it is still recommended that some mineral oil be removed and replaced with alkylbenzene or POE.



Part No.	Container Size (Lbs.)
27R402A	27 Lb Cylinder
110R402A ¹	110 Lb Cylinder

¹ returnable cylinder



24R408A

R-408A

R-408A: A retrofit blend for R-502 refrigeration systems. This blend has the closest pressure/temperature match to R-502 across the whole operating range of temperatures. Discharge temperature will increase;

however in most applications this will not impact system performance or long term reliability. In severe duty applications, such as transport refrigeration into hot climates, this blend may not be recommended by the OEM.



Part No.	Container Size (Lbs.)
24R408A	24 Lb Cylinder
100R408A ¹	100 Lb Cylinder
24R408ANRI	24 Lb Cylinder

¹ returnable cylinder

REFRIGERANTS

HCFC REFRIGERANTS



R-409A

R-409A: A retrofit blend for R-12 refrigeration systems. The pressure and system capacity match R-12 when the blend is running in a 10°F to 20°F evaporator, and there is typically 13°F temperature glide in the

evaporator. Applications: direct expansion refrigeration and air conditioning systems designed for R-12 or R-500; good success in any size system, minor adjustment of controls needed. Discharge pressure and temperature increases compared to R-12, which may be a problem in very hot ambient conditions. Capacity holds well into lower application temperatures (-30°F). R-409A mixes well with mineral oil down to 0°F. As a result it may not be necessary to change oil in systems which do not run colder than 0°F in the evaporator (below 0°F alkylbenzene should replace some mineral oil).



Part No.	Container Size (Lbs.)
30R409A	30 Lb Cylinder

CFC REFRIGERANTS

R-12

R-12: Before its production phaseout in 1995, it was used in a variety of applications from small hermetic refrigeration systems up through large, positive pressure chillers. It was long-time industry standard for automotive air conditioning, kitchen appliances, high/medium/low temperature refrigeration, and many other commercial and industrial applications. Limited quantities of reclaimed R-12 is still available for service of installed equipment.

An EPA certification card is required to purchase CFC and HCFC refrigerants.



Part No.	Container Size (Lbs.)
30R12	30 Lb Cylinder



R-500

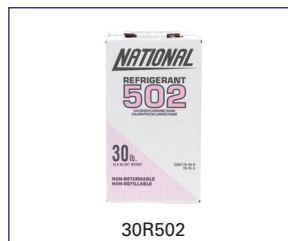
R-500: Designed to be a higher capacity R-12 type refrigerant, R-500 found some use in air conditioning and dehumidifier equipment and in positive pressure centrifugal chillers.

An EPA

certification card is required to purchase CFC and HCFC refrigerants.



Part No.	Container Size (Lbs.)
30R500	30 Lb Cylinder



R-502

R-502: Before its phaseout in 1995, it was used in low temperature refrigeration (the evaporator pressure stays out of vacuum down to -40°F). R-502 offered lower discharge temperature and improved capacity compared to

R-22. Commercial refrigeration systems could perform low temperature refrigeration in a single stage with relatively inexpensive compressors.

An EPA certification card is required to purchase CFC and HCFC refrigerants.



Part No.	Container Size (Lbs.)
30R502	30 Lb Cylinder
125R502 ¹	125 Lb Cylinder

¹ returnable cylinder

ANALYTICAL TESTING SERVICE

REFRIGERANTS

- Refrigerant: Testing to ARI Standard 700 specifications.
- Refrigeration Oil: Testing oil quality as indication of system performance.
- Halon Testing: Testing to Military/ASTM/Government 1301/1211/1202 specifications.
- National Refrigerants, Inc. analytical testing service offers easy-to-use sample kits for: Refrigerant; Halon; Refrigeration Oil; Specialty Testing



REFRIGERANTS

Testing liquid phase to AHRI 700 specifications for fluorocarbon refrigerants for one or more of the following:

- Identification (Infrared Spectroscopy)
- Moisture

- Acidity
 - High Boiling Residue/Oil Content
 - Particulates/Solids
 - Purity (Gas Chromatography)
 - Chloride
- NRIHPN does not include prepaid shipping



Part No.	Description
NRIHPN	High Pressure Refrigerant Analysis
NRILP	Low Pressure Refrigerant Analysis



NRIOA

LUBRICANTS

Testing of lubricant for one or more of the following:

- Identification (Infrared Spectroscopy)
- Moisture
- Appearance
- Acidity

- Viscosity
- Wear Metals
- Residual Mineral Oil (as requested)
- Fluoride, Chloride and Conductivity (as requested, extra cost)



Part No.	Description
NRIOA	Oil Analysis



NRINCN

NON-CONDENSABLE GAS

Specifications for fluorocarbon refrigerants requires a vapor only sample taken from the source vapor phase.

NRINCN does not include prepaid shipping



Part No.	Description
NRINCN ¹	Testing Vapor Phase to AHRI 700

¹ Not applicable to R11, R113 or R123

LABELS, ACCESSORIES



NL1

CERTIFICATE OF REMOVAL

Measures 3" x 4". To identify that the refrigerant has been properly removed from a cooling unit, for disposal, in accordance with the 1990 Clean Air Act amendment requirements.



Part No.	Pkg Qty
NL1	10



NL11

RECOVERED REFRIGERANT, LARGE

Meets DOT requirements for transporting refrigerants. All recovered refrigerant labels are designated with color code and shipping classification.



- Measures 5" x 10 1/2"

Part No.	Ref.	Pkg Qty
NL11	R11	5
NL12	R12	5
NL134A	R134A	5
NL22	R22	5
NL502	R502	5



NR11

RECOVERED REFRIGERANT, SMALL

- Measures 3" x 4"



Part No.	Ref.	Pkg Qty
NR11	R11	10
NR134A	R134A	10
NR22	R22	10
NR500	R500	10
NR502	R502	10



NRE23

EQUIPMENT CONTENTS IDENTIFICATION

- Measures 2" x 4"



Part No.	Ref.	Pkg Qty
NRE23	R23	5
NRE401B	R401B	5
NRE402B	R402B	5
NRE404A	R404A	5
NRE406A	R406A	5
NRE407A	R407A	5
NRE407B	R407B	5
NRE407C	R407C	5
NRE408A	R408A	5
NRE409A	R409A	5
NRE410A	R410A	5
NRE422B	R422B	5
NRE422D	R422D	5
NRE448A	R448A	5
NRE507	R507	5

OIL



VACUUM PUMP OIL, 330 ML

- For use with testo 565i 7CFM/198 l/min and 10 CFM / 283 l/min Vacuum Pumps
- Highly refined for top performance
- Ensures proper sealing and lubrication

- Excellent vacuum sealing performance
- Suitable for wide temperature range



Part No.	Description	Container Size
05641002	Vacuum pump oil, 330 ml	110 Oz



MINERAL OIL

- Low wax content
- Chemically and thermally stable
- Low pour point
- Napthenic mineral oil



Part No.	Viscosity (SUS)	Container Size	Case Qty*
1501G	150 SUS	1 Gal	6
1505G	150 SUS	5 Gal	1
15055G	150 SUS	55 Gal	1
3001G	300 SUS	1 Gal	6
3005G	300 SUS	5 Gal	1
30055G	300 SUS	55 Gal	1
5001G	500 SUS	1 Gal	6
5005G	500 SUS	5 Gal	1
5055G	500 SUS	55 Gal	1



ALKYLBENZENE OIL

High quality synthetic alkylbenzene refrigerant oil. Excellent miscibility and compatibility with all CFC and HCFC refrigerants.

AB200R is approved by Copeland for HCFC retrofit jobs.

The new AKB500E provides good miscibility with HCFC refrigerants and has the higher viscosity needed to work well with screw compressors.



Part No.	Viscosity (SUS)	Container Size	Case Qty*
150AKB1G	150 SUS	1 Gal	6
150AKB5G	150 SUS	5 Gal	1
150AKB55G	150 SUS	55 Gal	1
200AKB1G	200 SUS	1 Gal	6
200AKB5G	200 SUS	5 Gal	1
200AKB55G	200 SUS	55 Gal	1
300AKB1G	300 SUS	1 Gal	6
300AKB5G	300 SUS	5 Gal	1
300AKB55G	300 SUS	55 Gal	1
AKB500E1G	500 SUS	1 Gal	6
AKB500E5G	500 SUS	5 Gal	1
AKB500E55G	500 SUS	55 Gal	1



POLYOL ESTER OIL

Designed specifically for HFC refrigerants but miscible and compatible with all fluorocarbon refrigerants, mineral and alkylbenzene lubricants.

Packaged in metal containers.



Part No.	Container Size	Viscosity at 100°F (SUS)	Case Qty*
PE321P	1 Pt	32 (150 SUS)	12
PE321Q	1 Qt	32 (150 SUS)	12
PE321G	1 Gal	32 (150 SUS)	6
PE325G	5 Gal	32 (150 SUS)	1
PE681P	1 Pt	68 (300 SUS)	12
PE681Q	1 Qt	68 (300 SUS)	12
PE681G	1 Gal	68 (300 SUS)	6
PE685G	5 Gal	68 (300 SUS)	1



SOLESTLT321G

POLYOL ESTER OIL, SOLEST

National Refrigerants is now supplying several Solest lubricants. The Solest products are high quality polyol ester synthetic lubricants designed for use with air conditioning and industrial refrigeration compressors. They

extend the viscosity range of the current National line. They are excellent choices for initial fill, service and retrofit applications.

- Solest LT32: specifically designed for very low temperature applications. Good miscibility with R404A eliminating the need for 2 different lubricants in a cascade system.
- Solest 46: Used in centrifugal, reciprocating and rotary vane compressors.
- Solest 68: Used in a wide variety of compressor units.
- Solest 100: Mostly used in scroll and screw compressors.
- Solest 120: Provides good oil return in screw applications.
- Solest 150, 170, 180: Used mainly in Bitzer and Carlyle screw application.
- Solest 220: Mostly used in large screw type applications with R134a.
- CP4214-150, CP-4214-320: complex ester lubricants that cannot be used with HFC refrigerants. They provide good oil return in screw type applications with R22.
- Solest 370: Used mostly in screw type applications with HFC refrigerants



Part No.	Container Size	Viscosity		ISO Grade
		at 100°F (SUS)	at 40°C (cSt)	
SOLESTLT321G	1 Gal	149	29.15	32
SOLESTLT325G	5 Gal	149	29.15	32
SOLESTLT3255G	55 Gal	149	29.15	32
SOLEST461G	1 Gal	261	50.5	46
SOLEST465G	5 Gal	261	50.5	46
SOLEST4655G	55 Gal	261	50.5	46
SOLEST681G	1 Gal	329	64	68
SOLEST685G	5 Gal	329	64	68
SOLEST6855G	55 Gal	329	64	68
SOLEST1001G*	1 Gal	500	-	100
SOLEST1005G	5 Gal	500	-	100
SOLEST1201G	1 Gal	683	131	120
SOLEST1205G	5 Gal	683	131	120
SOLEST12055G	55 Gal	683	131	120
SOLEST1701G	1 Gal	883	175.2	170
SOLEST1705G	5 Gal	883	175.2	170
SOLEST17055G	55 Gal	883	175.2	170
SOLEST1801G	1 Gal	850	175	180
SOLEST2201G	1 Gal	1034	215.9	220
SOLEST2205G	5 Gal	1034	215.9	220
SOLEST22055G	55 Gal	1034	215.9	220
CP4214-3201G	1 Gal.	1500	298	320
CP4214-3205G	5 Gal.	1500	298	320
CP4214-1505G	5 Gal.	750	168	150



WF32

MINERAL OIL

- Equivalent to Capella™ (Capella™ is a registered trademark of Chevron Corporation)
- Low wax haze and floc temperature
- Napthenic oil



Part No.	Viscosity (SUS)	Container Size	Case Qty*
WF32	32, (150 SUS)	1 Gal	6
WF325	32, (150 SUS)	5 Gal	1
1TD	68, (300 SUS)	1 Gal	6
55TD	68, (300 SUS)	55 Gal	1
5TD	68, (300 SUS)	5 Gal	1

VACUUM PUMP OIL

A quality 200 SUS viscosity oil with a low vapor pressure and high lubricity.

Assures high vacuum pump performance.



Part No.	Container Size	Case Qty*
VP01P	1 Pint	24
VP01Q	1 Quart	12
VP01G	1 Gallon	6
VP05G	5 Gallon	1

LUBRICANTS

OIL

POLYOL ESTER OIL



431346

Designed specifically for use with HFC refrigerants, they have been developed to meet the performance demands of the refrigeration industry.

The lubricants have excellent thermal and chemical stability, and

are compatible with a wide range of elastomers, polymeric materials and other materials of construction. They are fully miscible and compatible with mineral oils and alkylbenzene lubricants as well as with CFCs, HCFs and HFCs.

- Supplied in metal containers



Part No.	Container Size	Viscosity		Description	Case Qty*
		at 100°F (SUS)	at 40°C (cSt)		
431346	1 Gal	100	18.9	ICI Emkarate RL22H	4
431445	5 Gal	150	33.7	ICI Emkarate RL32H	1
431546	1 Gal	200	46	ICI Emkarate RL46H	4
431646	1 Gal	300	72.3	ICI Emkarate RL68H	4
431645	5 Gal	300	72.3	ICI Emkarate RL68H	1
431826	1 Gal	850	170	ICI Emkarate RL170H	4
431691	1 Gal	425	84.1	ICI Emkarate RL85HB1	4
431466	1 Gal	150	31.2	ICI Emkarate RL32CF	4

POLYOL ESTER OIL



998E02200

COPELAND

Part No.	Container Size
998E02200*	1 Qt
998E02201*	1 Gal



431914

POLYVINYLETHER OIL

PVE or polyvinylether lubricants are finding increased application and use by compressor and equipment manufacturers. The list of OEM's that have tested and approved Idemitsu's PVE

Lubricants is impressive. PVE

lubricants exhibit excellent performance characteristics in air conditioning and refrigeration applications, and they are particularly well suited for use with HFC refrigerants such as R-134a, R-404, R-407C, and R-410A. In fact, PVE lubricants are compatible with all HFC refrigerants.

In addition to its solubility and miscibility characteristics, the PVE lubricant provides for increased stability and lubrication. In particular, PVE lubricants do not hydrolyze in the presence of moisture, a very important feature in HVAC/R applications. Additionally, they are compatible with other refrigeration oils and process fluids. PVE lubricants also exhibit compatibility and performance with frequently used anti-wear additives.



Part No.	Container Size	ISO Grade
431914	1 Qt	32
431924	1 Qt	68



D01

OILER

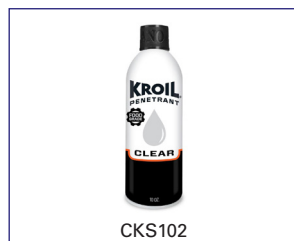
- Zoom telescoping spout
- 12 containers per case
- 4 fluid oz. container



Part No.	Description	Container Size
D01	Turbine Oiler	4 Fl Oz

*WARNING: This item may contain chemicals known to cause cancer and/or reproductive harm in the state of California. For more information go to www.P65Warnings.ca.gov

SPRAY LUBRICANT



UTILITY BORESCOPE

Kroil penetrants have been trusted by industrial maintenance professionals for decades to loosen, remove, repair and replace rusted and frozen metal parts. Kroil Clear works quickly to

penetrate and free rusted nuts, bolts, fasteners, shafts, pulleys, joints, linkages and more. It is odorless and non-staining, and perfect for planned and unplanned maintenance, as well as equipment disassembly.

- SAFE FOR USE ON FOOD & BEVERAGE EQUIPMENT
- ODORLESS & NON-STAINING
- NSF-H1 REGISTERED & KOSHER CERTIFIED

KANO

Part No.	Description	Container Size
CKS102	Kroil Clear	10 Oz Spray



PENETRATE HD

Specially formulated with new low surface tension technology to seep into the smallest cracks, crevices, seams, or threads of rusted, seized, and corroded parts. Quickly dissolves the bonds of rust, corrosion, carbon deposits, gums,

varnishes, and grease to free the metal parts. Penetrate HD displaces water and leaves a lubricating film to protect metal parts and further prevent rust and corrosion. Unique formula uses capillary action to penetrate into the smallest spaces.

- Super penetrating lubricant
- Loosens rusted and frozen metal parts
- Frees stuck fan blades, blower shafts, pulleys, rusted nuts and bolts, etc.
- Saves time and labor
- Lubricates and protects metals
- Dielectric strength to 40,000 volts

ClenAir
Nu-Calgon

Part No.	Description	Container Size
61105	Penetrate HD	12 Oz Can spray



WD40

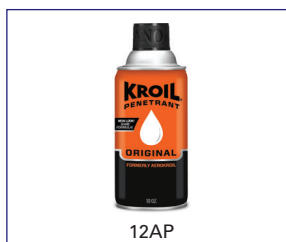
Known as "the can with a thousand uses," WD-40 protects metal from rust and corrosion, penetrates stuck parts, displaces moisture, and lubricates just about anything. WD-40 is also great when it comes to cleaning grease,

grime, and other marks from most surfaces.

- Gets under dirt, grime and grease to clean. It also dissolves adhesives, allowing easy removal of labels, tape, stickers, and excess bonding material.
- Because WD-40 displaces moisture, it quickly dries out electrical systems to eliminate moisture-induced short circuits.
- Loosens rust-to-metal bonds and frees stuck, frozen or rusted metal parts.
- Lubricating ingredients are widely dispersed and hold firmly to all moving parts.
- Protects metal surfaces with corrosion-resistant ingredients to shield against moisture and other corrosive elements.



Part No.	Description	Container Size
490057	WD40® Smart Straw, Low VOC	12 Oz spray can



AEROKROIL

Kroil's 10 oz. aerosol can of penetrating oil (formerly known as AeroKroil) helps protect and clean metal surfaces. Loosens frozen nuts and bolts, displaces water and prevents rust. Easy application makes even the

toughest maintenance jobs easier, faster, and simpler.

KANO

Part No.	Description	Container Size
12AP	Kroil Penetrant Original (formerly known as AeroKroil), Penetrating Oil Aerosol, Multipurpose, Penetrant, KS102C	10 Oz Aerosol can

LUBRICANTS

GREASE



RT910T

FOOD GRADE SILICONE GREASE

The lubricant of choice for use in food equipment, water fixtures and heat generating appliances. Use in places where petroleum oils are inadequate or not desirable.

Silicones are compatible with most plastics, rubber, leather, composite

fibers and all metals. Often recommended as a sealing lubricant on o-rings, valves, vacuum and pneumatic assemblies. Its high dielectric strength allows for the safe lubrication of electromechanical devices. Stable consistency with low volatility. Chemically resistant and waterproof.

Food Grade Silicone 95%, with antioxidant and corrosion inhibitors. NSF authorized for use in federally inspected meat and poultry plants. Rated H-1 for incidental food contact. A very inert non-toxic material having exceptional physical and thermal stability.



Part No.	Container Size
RT910T	3 Oz tube

COMPRESSOR LUBRICATION



48140

CANVERTER®

A hand-held pump used to remove oil from and add oil to hermetic compressors. Packaged with appropriate tubing.



Part No.	Description
48140*	Hand Oil Pump

CONTAMINATION ANALYSIS



RHB-82

OIL REFRACTOMETER

Used to determine percentage of mineral oil in a refrigeration system during POE changeover. A brix scale, a refractive index, or any list of markings can be used to determine mineral oil

percentage.



ENERGY SAVING PRODUCTS

Part No.	Description
RHB-82	Oil Refractometer



*WARNING: This item may contain chemicals known to cause cancer and/or reproductive harm in the state of California. For more information go to www.P65Warnings.ca.gov

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