



Page

- Refrigerants522-528
- Testing..... 529
- Refrigerant Recovery 530
- Refrigerant Labels.....530-531
- Lubricants.....531-536
- Lubricants Cross Reference Guide533-534

ALTERNATIVE REFRIGERANT ANALYSIS

Replaces	ASHRE Number	Components (% by weight)	Lubricants	Temp Glide (°F)	Safety Class	Application
R-22	R-407A	R32/125/134a (20/40/40)	POE	10	A1	Med Temp Refrigeration Low Temp Refrigeration
	R-407C	R32/125/134a (23/25/52)	POE	10	A1	Air Conditioning Med Temp Refrigeration
	R-410A	R32/125 (50/50)	POE	0.2	A1	Air Conditioning
	R-422B	R125/134a/600a (55/42/3)	MO/AB/POE	7	A1	Air Conditioning Med Temp Refrigeration
	R-422D	R125/134a/600a (65.1/31.5/3.4)	MO/AB/POE	7	A1	Med Temp Refrigeration Low Temp Refrigeration
	R-448A	R32/125/1234yf/134a/1234ze (26/26/20/21/7)	POE	11	A1	Med and Low Temp Refrigeration
	R-449A	R32/125/1234yf/134a (24.3/24.7/25.3/25.7)	POE	11	A1	Med and Low Temp Refrigeration
R-134a	R-1234yf	100%	POE	0	A2L	Automotive A/C, Stand-Alone Refrigeration
	R-1234ze	100%	POE	0	A2L	NEW Chillers
	R-417C	R-125/134a/600 (19.5/78.8/1.7)	MO/AB/POE	6	A1	Retrofit R-12 and other blends containing R-22
	R-450A	R134a/1234ze (42/58)	POE	1	A1	Chillers, Med Temp Refrigeration
	R-513A	R134a/1234yf (44/56)	POE	1	A1	Chillers, Med Temp Refrigeration
R-404A R-507	R-407A	R32/125/134a (20/40/40)	POE	10	A1	Med Temp Refrigeration Low Temp Refrigeration
	R-422C	R125/134a/600a (82/15/3)	MO/AB/POE	5	A1	Med Temp Refrigeration Low Temp Refrigeration
	R-448A	R32/125/1234yf/134a/1234ze (26/26/20/21/7)	POE	11	A1	Med Temp Refrigeration Low Temp Refrigeration
	R-449A	R32/125/1234yf/134a (24.3/24.7/25.3/25.7)	POE	11	A1	Med Temp Refrigeration Low Temp Refrigeration
	R-452A	R32/125/1234yf (11/59/30)	POE	5	A1	Med/Low Temp Refrig Transport Refrigeration
R12	R409A	R22/124/142b (60/25/15%)	MO/AB/POE	13	A1	Med Temp Refrigeration Low Temp Refrigeration
	R401B	R22/152a/124 (61/11/28%)	MO/AB/POE	9	A1	Low Temp Refrigeration
	R401A	R22/152a/124 (53/13/34%)	MO/AB/POE	9	A1	Med Temp Refrigeration Low Temp Refrigeration
	R134a	100%	POE	0	A1	Med Temp Refrigeration Automotive A/C
	R-417C	R-125/134a/600 (19.5/78.8/1.7)	MO/AB/POE	6	A1	Retrofit R-12 and other blends containing R-22
R502	R401A	R125/143a/22 (7/46/47%)	MO/AB/POE	9	A1	Med Temp Refrigeration Low Temp Refrigeration
	R402A	R125/290/22 (60/2/38%)	MO/AB/POE	2	A1	Med Temp Refrigeration Low Temp Refrigeration
	R404a	R125/143a/134a (44/52/4%)	POE	1	A1	Med Temp Refrigeration Low Temp Refrigeration
	R408A	R125/143a (50/50%)	MO/AB/POE	1	A1	Med Temp Refrigeration Low Temp Refrigeration
	R507	R125/143a/22 (7/46/47%)	POE	0	A1	Med Temp Refrigeration Low Temp Refrigeration
R114	R124	100%	MO/AB	0	A1	High ambient A/C
R11	R123	100%	MO/AB	0	A1	Centrifugal Chillers
R123	R1233zd	100%	MO/AB	0	A1	Centrifugal Chillers
R13	R23	100%	POE	0	A1	Very Low Temp Refrigeration
R503	R508B	R23/R116 (46/54%)	POE	0	A1	Very Low Temp Refrigeration
N/A	R502	R125/R143A (50/50%)	MO/AB	0	A1	Med Temp Refrigeration Low Temp Refrigeration
	R500	R12/R152A (74/26%)	MO/AB	0	A1	Commercial A/C
	R12	100%	MO/AB	0	A1	LT & MT Refrigeration Automotive A/C
	R22	100%	MO/AB/POE	0	A1	LT & MT Refrigeration Air Conditioning
	R600A	100%	MO/AB	0	A3	Domestic Ref & Freezers Vending Machines
	R290	100%	MO/AB/POE	0	A3	Med Temp Refrigeration Low Temp Refrigeration

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PRESSURE TEMPERATURE CHART

data subject to change

Pressure (in Hg/psig)	Temperature (°F)			Pressure (in Hg/psig)	Temp (°F)	Pressure (psig)	Temp (°F)
	R-11	R-123	1233zd				
20	24	33	18	4	5	15	-33
18	32	41	25	6	8	20	-27
16	39	47	31	0	11	25	-21
14	45	53	37	2	16	30	-16
12	50	58	42	4	21	35	-11
10	55	63	46	6	26	40	-6
8	59	67	51	8	30	45	-2
6	64	71	55	10	34	50	2
4	68	75	58	12	38	55	7
2	71	79	62	14	42	60	12
0	75	82	65	16	45	65	17
1	78	85	68	18	48	70	22
2	81	88	71	20	51	75	27
3	84	91	74	22	54	80	32
4	87	94	77	24	57	85	37
5	90	97	79	26	60	90	42
6	93	100	82	28	63	95	47
7	96	102	84	30	66	100	52
8	98	105	87	32	69	105	57
9	100	107	89	34	72	110	62
10	103	109	91	36	75	115	67
12	107	114	95	38	78	120	72
14	112	118	99	40	81	125	77
16	116	122	103	42	84	130	82
18	120	125	107	44	87	135	87
20	123	129	110	46	90	140	92
22	127	132	113	48	93	145	97
24	130	136	116	50	96	150	102
26	133	139	119	52	99	155	107
28	136	142	122	54	102	160	112
30	139	145	125	56	105	165	117
32	142	148	128	58	108	170	122
36	148	153	133	62	112	175	127
40	153	158	138	66	116	180	132
45	159	164	143	70	120	185	137

PRESSURE TEMPERATURE CHART

data subject to change

Pressure (psig)	Temperature (°F)						
	R-12	R-134a	1234yf	1234ze	600a	Liquid	417C Vapor
0	-22	-15	-21	-2	11	-27	-20
2	-16	-10	-16	4	17	-21	-15
4	-11	-5	-11	8	22	-17	-11
6	-6	-1	-6	13	27	-13	-7
8	-2	3	-2	17	32	-9	-3
10	2	7	2	21	36	-5	1
12	7	12	7	26	42	0	6
13	12	17	12	31	48	5	11
16	17	22	17	36	53	10	16
19	22	27	22	41	58	15	21
22	26	29	25	44	62	17	23
25	29	32	28	48	66	21	26
28	33	36	32	51	70	24	29
31	37	39	35	55	74	27	32
34	40	42	38	58	78	30	35
37	44	46	42	61	82	33	39
40	48	50	46	65	86	37	42
52	55	56	53	72	94	44	49
60	62	62	60	79	102	50	55
70	70	70	68	86	110	58	63
80	77	76	74	93	118	64	69
90	84	83	81	100	126	70	75
100	90	88	86	106	133	76	80
110	96	93	92	111	139	81	85
120	102	98	97	117	145	86	90
130	107	103	102	122	151	91	95
140	112	107	107	127	157	96	100
150	117	111	112	131	162	100	104
160	121	115	116	136	167	104	108
170	126	119	120	140	172	108	112
180	130	123	124	144	176	112	115
190	134	127	128	148	181	115	119
200	138	130	132	151	185	119	122
210	141	134	135	155	189	122	126
220	145	137	139	159	193	126	129
230	149	140	142	162	197	129	132
240	152	143	146	165	201	132	135
250	155	146	149	168	205	135	138

PRESSURE TEMPERATURE CHART

data subject to change

Note: R402A, R402B, R404A, R408A, and R410A. Saturated Vapor Temperatures are shown

Pressure (psig)	Temperature (°F)					
	R-22	R-290	R-407C Liquid	R-407C Vapor	R-422B Liquid	R-422B Vapor
2	-37	-39	-42	-29	-37	-28
4	-32	-34	-38	-25	-33	-23
6	-28	-29	-33	-21	-29	-19
8	-24	-25	-30	-17	-25	-16
10	-20	-21	-26	-14	-21	-12
13	-15	-16	-21	-9	-16	-7
16	-11	-11	-17	-4	-11	-3
19	-6	-6	-13	0	-7	2
22	-2	2	-9	4	-3	6
25	1	2	-5	7	1	9
28	5	6	-2	10	4	12
32	9	10	3	15	9	17
36	13	15	7	19	12	21
40	17	19	11	22	17	25
44	21	23	14	26	20	28
48	24	27	18	29	24	31
52	28	30	21	32	27	35
58	33	35	25	37	32	39
64	37	40	30	41	36	43
70	41	45	34	45	40	47
76	45	49	38	48	44	51
82	49	53	42	51	48	55
88	52	57	45	55	52	59
94	56	61	48	59	56	63
100	59	64	51	62	59	66
110	65	70	56	67	64	72
120	69	75	61	71	69	76
140	78	85	70	80	78	84
160	87	94	78	87	86	92
180	94	102	85	94	93	99
190	98	106	89	98	97	102
200	101	110	92	101	100	106
210	105	114	95	104	104	109
220	108	117	98	107	107	112
230	111	121	101	110	110	115
240	114	124	104	113	113	118
250	117	127	107	116	116	121
260	120	130	110	118	118	124
270	123	133	113	121	122	127
280	125	136	115	124	125	129
300	131	142	120	128	130	135
340	141	153	130	138	140	143

PRESSURE TEMPERATURE CHART

data subject to change

Pressure (in Hg/psig)	Temperature (°F)			Pressure (in Hg/psig)	Temp (°F)	Pressure (psig)	Temp (°F)
	R-13	R-23	R-503				
8	-125	-126	-137	-136	10	72	120
4	-120	-121	-131	-131	8	68	130
0	-115	-116	-127	-127	6	65	140
2	-110	-112	-122	-122	4	62	150
4	-106	-108	-119	-119	2	59	160
6	-103	-105	-115	-115	0	57	170
8	-99	-102	-112	-112	2	52	180
10	-96	-99	-109	-109	4	47	190
12	-93	-96	-106	-106	6	43	200
14	-90	-93	-103	-103	8	39	210
16	-88	-91	-101	-101	10	35	230
18	-85	-88	-98	-98	12	32	245
20	-83	-86	-96	-96	14	29	260
24	-78	-82	-92	-92	18	25	275
28	-74	-78	-88	-88	18	23	290
32	-70	-75	-84	-85	20	20	310
36	-66	-71	-81	-81	30	-8	330
40	-63	-68	-77	-78	40	2	350
50	-55	-61	-70	-71	50	11	375
60	-48	-55	-63	-64	70	26	400
70	-42	-49	-58	-59	90	38	450
80	-36	-44	-52	-53	110	49	500
100	-25	-34	-43	-44	130	59	550
120	-16	-26	-34	-36	150	67	600
140	-8	-19	-27	-28	170	75	650
150	-4	-16	-23	-25	190	83	690
160	-1	-12	-20	-21	205	88	720
170	3	-9	-17	-18	220	93	750
180	6	-6	-13	-15	235	97	780
190	9	-3	-11	-12	250	102	810
200	12	-1	-8	-9	265	106	840
215	17	3	-4	-5	280	110	870
230	21	7	0	1	300	116	890
245	25	11	4	2	340	126	930
260	29	14	8	6	360	130	970
275	33	17	11	9	380	135	1000

PRESSURES - psig
TEMPERATURES - F

PRESSURE TEMPERATURE CHART

data subject to change

Pressure (psig)	Temperature (°F)						
	R-401A Liquid	R-401A Vapor	R-401B Liquid	R-401B Vapor	R-409A Liquid	R-409A Vapor	R-450A Liquid
2	-22	-13	-21	-16	-25	-9	-5
4	-18	-8	-17	-11	-20	-5	-1
6	-13	-4	-12	-7	-16	0	4
8	-9	0	-8	-3	-12	4	8
10	-5	4	-4	1	-8	7	12
13	0	9	3	6	-2	12	17
16	5	14	2	11	2	17	22
19	9	18	6	15	7	22	27
22	13	22	10	19	11	26	31
25	17	26	14	23	15	30	35
28	21	30	18	26	19	33	39
31	24	33	21	30	22	37	42
34	28	36	24	33	25	40	45
37	31	39	28	36	29	43	48
40	34	42	31	39	32	46	51
44	38	46	34	43	36	50	55
48	41	50	38	46	39	53	59
52	45	53	41	50	43	57	62
60	51	60	48	56	49	63	69
70	59	67	55	63	57	71	76
80	66	74	62	70	64	77	83
90	72	80	68	76	70	84	89
100	78	85	74	82	76	89	95
110	83	91	80	87	82	95	101
120	88	96	85	92	87	100	106
130	93	101	90	97	92	105	111
140	98	105	94	101	96	109	115
150	102	110	99	106	101	114	120
160	106	114	103	110	105	118	124
170	111	118	107	114	109	122	128
180	114	122	111	117	113	126	132
190	118	125	114	121	117	129	136
200	122						

REFRIGERANTS

HYDROCARBONS



014R290

R-290 (PROPANE)

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.	Container Size	Price
014R290	14 Oz.	



014R600A

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 system. 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	Price
016RPENTANE	Pentane, Liquid	16 Oz.	
014r600a	R-600a (iso-Butane)	14.8 Oz.	

HFO REFRIGERANTS



R-1233ZD

Part No.	Container Size	Price
10R1233ZD	10 Lb Cylinder	
100R1233ZD	100 Lb Cylinder	



110R1234ZE

R-1234



Part No.	Container Size	Price
10R1234YF	10 Lb Cylinder	
10R1234ZE	10 Lb Cylinder	
110R1234ZE	110 Lb Cylinder	



25R450A

R-450A



Part No.	Container Size	Price
25R450A	25 Lb Cylinder	



30R513A

R-513A



Part No.	Container Size	Price
30R513A	30 Lb Cylinder	
125R513A	125 Lb Cylinder	

Please contact your local United Refrigeration Branch or our Customer Service Center for pricing.

HFC/HFO REFRIGERANTS

HFC REFRIGERANTS



R-448A



Part No.	Container Size	Price
25R448A	25 Lb Cylinder	
100R448A	100 Lb Cylinder	



R-134a



Part No.	Container Size	Price
30R134A	30 Lb Cylinder	
125R134A	125 Lb Cylinder	
1750R134A	1,750 Lb Cylinder	
1000R134A	1,000 Lb Cylinder	



R-449A



Part No.	Container Size	Price
25R449A	25 Lb Cylinder	
110R449A	110 Lb Cylinder	



R-23



Part No.	Container Size	Price
5R23	5 Lb Cylinder	
9R23	9 Lb Cylinder	
20R23	20 Lb Cylinder	
70R23	70 Lb Cylinder	



R-452A



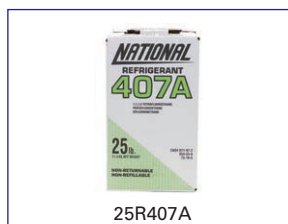
Part No.	Container Size	Price
900R449A	900 Lbs	
25R452A	25 Lb Cylinder	
100R452A	100 Lb Cylinder	



R-404A



Part No.	Container Size	Price
24R404A	24 Lb Cylinder	
100R404A	100 Lb Cylinder	
800R404A	800 Lb Cylinder	
1300R404A	1,300 Lb Cylinder	



R-407A



Part No.	Container Size	Price
25R407A	25 Lb Cylinder	
100R407A	100 Lb Cylinder	
925R407A	925 Lb Cylinder	

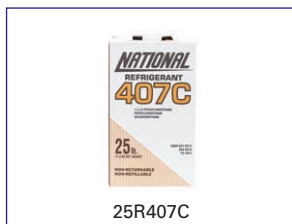
Please contact your local United Refrigeration Branch or our Customer Service Center for pricing.

REFRIGERANTS & LUBRICANTS

REFRIGERANTS

HFC REFRIGERANTS

R-407C

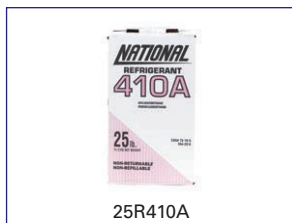


25R407C



Part No.	Container Size	Price
25R407C	25 Lb Cylinder	
115R407C	115 Lb Cylinder	
925R407C	925 Lb Cylinder	

R-410A



25R410A



Part No.	Container Size	Price
25R410A	25 Lb Cylinder	
100R410A	100 Lb Cylinder	
850R410A	850 Lb Cylinder	

R-417C



25R417C



Part No.	Container Size	Price
25R417C	25 Lb Cylinder	

R-422B



25R422B



Part No.	Container Size	Price
25R422B	25 Lb Cylinder	
110R422B	110 Lb Cylinder	

R-422D

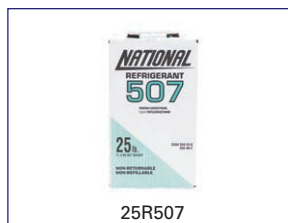


25R422D



Part No.	Container Size	Price
25R422D	25 Lb Cylinder	
110R422D	110 Lb Cylinder	

R-507



25R507



Part No.	Container Size	Price
25R507	25 Lb Cylinder	
100R507	100 Lb Cylinder	
800R507	800 Lb Cylinder	
1400R507	1,400 Lb Cylinder	

R-508B



5R508B



Part No.	Container Size	Price
5R508B	5 Lb Cylinder	
10R508B	10 Lb Cylinder	
20R508B	20 Lb Cylinder	
70R508B	70 Lb Cylinder	

Please contact your local United Refrigeration Branch or our Customer Service Center for pricing.

HCFC REFRIGERANTS

R-123

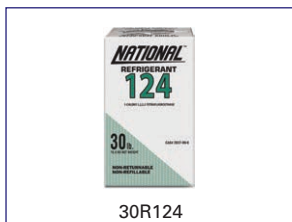


100R123



Part No.	Container Size	Price
100R123	100 Lb Drum	
200R123	200 Lb Drum	
650R123	650 Lb Drum	

R-124

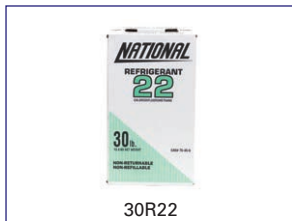


30R124



Part No.	Container Size	Price
30R124	30 Lb Cylinder	
145R124	145 Lb Cylinder	

R-22

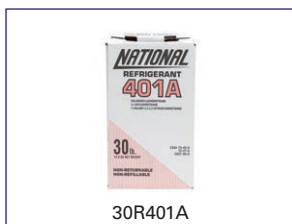


30R22



Part No.	Container Size	Price
30R22	30 Lb Cylinder	
125R22	125 Lb Cylinder	
1000R22	1,000 Lb Cylinder	
1750R22	1,750 Lb Cylinder	

R-401A

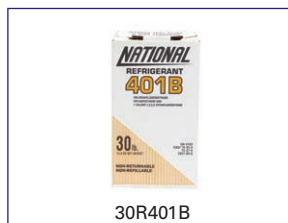


30R401A



Part No.	Container Size	Price
30R401A	30 Lb Cylinder	
125R401A	125 Lb Cylinder	

R-401B

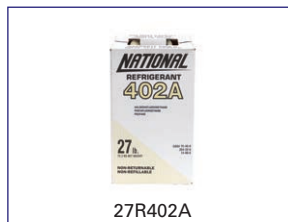


30R401B



Part No.	Container Size	Price
30R401B	30 Lb Cylinder	

R-402A

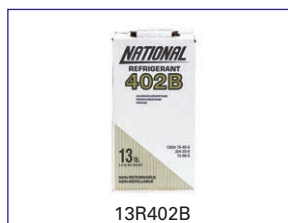


27R402A



Part No.	Container Size	Price
27R402A	27 Lb Cylinder	
110R402A	110 Lb Cylinder	

R-402B

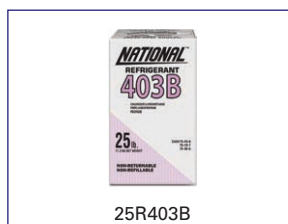


13R402B



Part No.	Container Size	Price
13R402B	13 Lb Cylinder	

R-403B



25R403B



Part No.	Container Size	Price
25R403B	25 Lb Cylinder	

R-408A



24R408A



Part No.	Container Size	Price
24R408A	24 Lb Cylinder	
100R408A	100 Lb Cylinder	

REFRIGERANTS & LUBRICANTS

Please contact your local United Refrigeration Branch or our Customer Service Center for pricing.

REFRIGERANTS

HCFC REFRIGERANTS



R-409A



Part No.	Container Size	Price
30R409A	30 Lb Cylinder	

CFC REFRIGERANTS



R-12



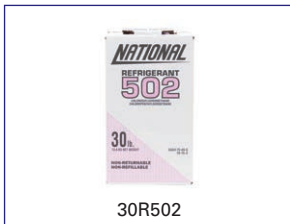
Part No.	Container Size	Price
30R12	30 Lb Cylinder	



R-500



Part No.	Container Size	Price
30R500	30 Lb Cylinder	



R-502



Part No.	Container Size	Price
30R502	30 Lb Cylinder	
125R502	125 Lb Cylinder	

REFRIGERANTS & LUBRICANTS

NRI

P/T Calculator

- ✓ Unique system graphics makes temperatures glide and average coil temperature simple to understand
- ✓ Performs superheat and subcooling calculations

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ANALYTICAL TESTING SERVICE



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

Sampling Kit Features:

- Easy-to-use, single use, sample cylinders
- High-pressure sample cylinder rated to 400 psig suitable for most alternative refrigerants and blends
- Instructions included for proper sampling procedures
- All analysis forms and necessary DOT labeling included
- All analysis reports are returned with written commentary and recommendations
- Same day results available upon request for additional fee
- Sample cylinders available for very high pressure (VHP) refrigerant



REFRIGERANTS



NRIHPN

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	Price
NRIHPN	High Pressure Refrigerant Analysis	\$301.30
NRILP	Low Pressure Refrigerant Analysis	\$331.20



NRI0A

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	Price
NRI0A	Oil Analysis	\$120.00



NRINC

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	Price
NRINCN ¹	Testing Vapor Phase to AHRI 700	\$132.00

¹Not applicable to R11, R113 or R123

REFRIGERANTS

REFRIGERANT RECOVERY



DC30HP

EZ ONE-SHOT™

Why is the EZ ONE-SHOT™ Recovery Cylinder different from traditional recovery cylinders? EZ ONE-SHOT™ cylinders use DOT-39 disposable cylinder technology to provide an inexpensive, lightweight cylinder for use in one-time fill recovery situations. One-time fill means that once refrigerant has been put into the cylinder and then removed, the cylinder may no longer be used for further recovery operations. It must be scrapped or disposed of properly. Recovering refrigerant with an EZ ONE-SHOT™ recovery cylinder is considered the first filling operation. Recovery from several units, one after the other, until the cylinder is full represents one filling operation (for example, a dedicated shop machine). EZ ONE-SHOT™ recovery cylinders are subject to the same regulations as the disposable refrigerant cylinder refrigerant is supplied in. Federal law forbids transportation if REFILLED. Federal law also requires that cylinders be filled and transported in the box provided. Penalty up to \$500,000 fine and 5 years imprisonment (49 U.S.C. 5124)

Applications for the EZ ONE-SHOT™

- Temporary storage receiver (where policy demands a clean cylinder for each job)
- Single recovery job where gas will need to be returned or stored.
- Dedicated shop machines.
- Download everyday cylinder to return refrigerant. There are many situations in which you will still need your traditional recovery cylinders. The EZ ONE-SHOT™ cylinder will complement, but not replace, your current recovery cylinder program. Applications where EZ ONE-SHOT™ should NOT be used:
- Multiple small jobs at different locations or at different times — back flow prevention valves will not allow additional recovery after the valves have been closed.
- Everyday service (can't be filled more than once)



Part No.	Description	Price
DC30HP	30 Lb. Disposable Reclaim Cylinder	\$71.14

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	Price
NL1	10	\$9.56



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	Price
NL11	R11	5	\$10.84
NL12	R12	5	\$10.84
NL134A	R134a	5	\$10.84
NL22	R22	5	\$18.14
NL502	R502	5	\$10.84



NR11

RECOVERED REFRIGERANT, SMALL

- Measures 3" x 4"



Part No.	Ref.	Pkg Qty	Price
NR11	R11	10	\$12.50
NR134A	R134a	10	\$12.50
NR22	R22	10	\$12.50
NR500	R500	10	\$12.50
NR502	R502	10	\$12.50



EQUIPMENT CONTENTS IDENTIFICATION

- Measures 2" x 4"



NRE410A

Part No.	Ref.	Pkg Qty	Price
NRE134A	R134a	5	\$11.90
NRE23	R23	5	\$11.90
NRE401A	R401A	5	\$11.90
NRE401B	R401B	5	\$11.90
NRE402A	R402A	5	\$11.90
NRE402B	R402B	5	\$11.90
NRE404A	R404A	5	\$11.50
NRE406A	R406A	5	\$11.90
NRE407A	R407A	5	\$11.50
NRE407B	R407B	5	\$11.90
NRE407C	R407C	5	\$11.50
NRE408A	R408A	5	\$11.90
NRE409A	R409A	5	\$11.90
NRE410A	R410A	5	\$11.90
NRE422B	R422B	5	\$9.80
NRE422D	R422D	5	\$11.90
NRE448A	R448A	5	\$9.50
NRE507	R507	5	\$11.90

OIL



MINERAL OIL

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



1501G

Part No.	Viscosity (SUS)	Container Size	Case Qty*	Price
1501G	150 SUS	1 Gal.	6	\$57.48
1505G	150 SUS	5 Gal.	1	\$286.46
15055G	150 SUS	55 Gal.	1	\$3,028.44
3001G	300 SUS	1 Gal.	6	\$52.90
3005G	300 SUS	5 Gal.	1	\$268.92
30055G	300 SUS	55 Gal.	1	\$2,843.02
5001G	500 SUS	1 Gal.	6	\$82.52
5005G	500 SUS	5 Gal.	1	\$351.44
5055G	500 SUS	55 Gal.	1	\$2,901.36



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

150AKB1G

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*	Price
150AKB1G	150 SUS	1 Gal.	6	\$104.28
150AKB5G	150 SUS	5 Gal.	1	\$548.62
150AKB55G	150 SUS	55 Gal.	1	\$4,733.02
200AKB1G	200 SUS	1 Gal.	6	\$107.76
200AKB5G	200 SUS	5 Gal.	1	\$559.94
200AKB55G	200 SUS	55 Gal.	1	\$5,182.30
300AKB1G	300 SUS	1 Gal.	6	\$135.20
300AKB5G	300 SUS	5 Gal.	1	\$645.42
300AKB55G	300 SUS	55 Gal.	1	\$6,212.90
AKB500E1G	500 SUS	1 Gal.	6	\$147.34
AKB500E5G	500 SUS	5 Gal.	1	\$615.12
AKB500E55G	500 SUS	55 Gal.	1	\$5,294.50



POLYOL ESTER OIL

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

PE321P



Part No.	Container Size	Viscosity		
		at 100°F (SUS)	Case Qty*	Price
PE321P	1 Pt.	32 (150 SUS)	12	\$29.66
PE321Q	1 Qt.	32 (150 SUS)	12	\$58.36
PE321G	1 Gal.	32 (150 SUS)	6	\$158.34
PE325G	5 Gal.	32 (150 SUS)	1	\$694.30
PE681P	1 Pt.	68 (300 SUS)	12	\$31.08
PE681Q	1 Qt.	68 (300 SUS)	12	\$71.56
PE681G	1 Gal.	68 (300 SUS)	6	\$205.96
PE685G	5 Gal.	68 (300 SUS)	1	\$1,010.74



Lubricants Cross Reference Guide



OEM PART #	Lubricant Type	Viscosity	
Bitzer B100	Mineral Oil	500 SUS / 100 ISO	NL 500
Bitzer 5.2	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
Bitzer BSE 32	Polyolester	32 ISO / 150 SUS	NL PE 32
Bitzer BSE 55	Polyolester	68 ISO / 300 SUS	NL PE 68
Bitzer BSE 170	Polyolester	170 ISO / 800 SUS	Solest 170
Bitzer BSE 220	Polyolester	220 ISO / 1000 SUS	Solest 220
Bitzer BSE 320SH	Polyolester	320 ISO / 1500 SUS	CP 4214-320
Bitzer BSE 150SH	Polyolester	150 ISO / 750 SUS	CP 4214-150
BVA 3	Mineral Oil	150 SUS / 32 ISO	NL 150
BVA 4	Mineral Oil	300 SUS / 68 ISO	NL 300
BVA 5	Mineral Oil	500 SUS / 100 ISO	NL 500
BVA Alkyl 150	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
BVA Alkyl 200ca	Alkylbenzene	200 SUS / 46 ISO	NL AKB 200R
BVA Alkyl 300	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
BVA RPOE LT32	Polyolester	32 ISO / 150 SUS	Solest LT32
BVA RPOE 32MA	Polyolester	32 ISO / 150 SUS	NL PE 32
BVA RPOE 68	Polyolester	68 ISO / 300 SUS	NL PE 68
BVA RPOE 120	Polyolester	120 ISO / 600 SUS	Solest 120
BVA RPOE 100	Polyolester	100 ISO / 500 SUS	Solest 100
BVA RPOE 170	Polyolester	170 ISO / 800 SUS	Solest 170
BVA RPOE 220	Polyolester	220 ISO / 1000 SUS	Solest 220
BVA Alkyl 100E	Alkylbenzene	500 SUS / 100 ISO	NL AKB 500E
Calumet RO-15	Mineral Oil	150 SUS / 32 ISO	NL 150
Calumet RO-30	Mineral Oil	300 SUS / 68 ISO	NL 300
Carrier PP45EB304	Mineral Oil	150 SUS / 32 ISO	NL 150
Carrier PP23BB005	Mineral Oil	300 SUS / 68 ISO	NL 300
Carrier PP23BB006	Mineral Oil	300 SUS / 68 ISO	NL 300
Carrier PP23BZ-105	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
Carrier PP23BZ-102	Polyolester	32 ISO / 150 SUS	NL PE 32
Carrier PP23BZ-106	Polyolester	32 ISO / 150 SUS	NL PE 32
Carrier PP23BZ-103	Polyolester	68 ISO / 300 SUS	NL PE 68
Carrier PP23BZ-107	Polyolester	68 ISO / 300 SUS	NL PE 68
Carrier PP23BZ-104	Polyolester	220 ISO / 1000 SUS	Emkarate RL 220H+
Carrier Spec: PP16-0	Mineral Oil	150 SUS / 32 ISO	NL 150
Carrier Spec: PP31-2	Mineral Oil	150 SUS / 32 ISO	NL 150
Carrier Spec: PP33-2	Mineral Oil	150 SUS / 32 ISO	NL 150
Carrier Spec: PP16-2	Mineral Oil	300 SUS / 68 ISO	NL 300
Carrier Spec: PP36-1	Mineral Oil	300 SUS / 68 ISO	NL 300
Carrier Spec: PP49-5	Mineral Oil	300 SUS / 68 ISO	NL 300
Carrier Spec: PP47-8	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
Carrier Spec: PP49-8	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
Carrier Spec: PP47-30	Polyolester	32 ISO / 150 SUS	NL PE 32
Carrier Spec: PP47-31	Polyolester	68 ISO / 300 SUS	NL PE 68
Carrier Spec: PP47-32	Polyolester	220 ISO / 1000 SUS	Solest 220
Carrier Spec: PP47-33	Polyolester	100 ISO / 500 SUS	Solest 100
Castrol SW32	Polyolester	32 ISO / 150 SUS	NL PE 32
Castrol SW68	Polyolester	68 ISO / 300 SUS	NL PE 68
Castrol SW220	Polyolester	220 ISO / 1000 SUS	Solest 220
Chevron (Texaco) Capella WF 32	Mineral Oil	150 SUS / 32 ISO	NL WF 32
Chevron (Texaco) Capella WF 68	Mineral Oil	300 SUS / 68 ISO	NL WF 68
Copeland Ultra 32-3MAF	Polyolester	32 ISO / 150 SUS	NL PE 32
Copeland Ultra 22CC	Polyolester	22 ISO / 100 SUS	NL PE 32
Copeland Ultra 32CC	Polyolester	32 ISO / 150 SUS	NL PE 32
Copeland 998-E170-xx	Polyolester	170 ISO / 800 SUS	CP 4214-150
Copeland 998-E320-xx	Polyolester	320 ISO / 1500 SUS	CP 4214-320
CPI Solest 180	Polyolester	180 ISO / 850 SUS	Solest 180
CPI Solest LT32	Polyolester	32 ISO / 150 SUS	Solest LT32
CPI Solest 46	Polyolester	46 ISO / 200 SUS	Solest 46
CPI Solest 68	Polyolester	68 ISO / 300 SUS	Solest 68
CPI Solest 100	Polyolester	100 ISO / 500 SUS	Solest 100
CPI Solest 120	Polyolester	120 ISO / 600 SUS	Solest 120
CPI Solest 150	Polyolester	150 ISO / 750 SUS	Solest 150
CPI Solest 170	Polyolester	170 ISO / 800 SUS	Solest 170
CPI Solest 220	Polyolester	220 ISO / 1000 SUS	Solest 220
CPI Solest 370	Polyolester	370 ISO / 1700 SUS	Solest 370
CPI CP 4214-150	Polyolester	150 ISO / 750 SUS	CP 4214-150
CPI CP 4214-320	Polyolester	320 ISO / 1500 SUS	CP 4214-320
Emkarate RL32H	Polyolester	32 ISO / 150 SUS	NL PE 32
Emkarate RL220+	Polyolester	220 ISO / 1000 SUS	Solest 220
Emkarate RL100H	Polyolester	100 ISO / 500 SUS	Solest 100
Emkarate RL32-3MAF	Polyolester	32 ISO / 150 SUS	NL PE 32
Emkarate RL46H	Polyolester	46 ISO / 200 SUS	Solest 46
Emkarate RL170H	Polyolester	170 ISO / 800 SUS	Solest 170
Emkarate RL68H	Polyolester	68 ISO / 300 SUS	NL PE 68
Frick #2A	Mineral Oil	300 SUS / 68 ISO	NL 300
Frick #5	Mineral Oil	150 SUS / 32 ISO	NL 150
Frick #6	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
Frick #7	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
Frick #13	Polyolester	68 ISO / 300 SUS	NL PE 68, Solest 68



OEM PART #	Lubricant Type	Viscosity	
Frick #3	Mineral Oil	300 SUS / 68 ISO	NL 300
Hitachi SR-30	Polyolester	320 ISO / 1500 SUS	CP 4214-320
Maneurop 160Z	Polyolester	32 ISO / 150 SUS	NL PE 32
Maneurop 160HZ	Polyolester	32 ISO / 150 SUS	NL PE 32
Maneurop 160P	Mineral Oil	150 SUS / 32 ISO	NL 150
Maneurop 160PZ	Polyolester	32 ISO / 150 SUS	NL PE 32
Maneurop 160SZ	Polyolester	32 ISO / 150 SUS	NL PE 32
Mobil EAL Arctic 46	Polyolester	46 ISO / 200 SUS	Solest 46
Mobil EAL Arctic 22 CC	Polyolester	22 ISO / 100 SUS	NL PE 32
Mobil EAL Arctic 32	Polyolester	32 ISO / 150 SUS	NL PE 32
Mobil Zerice S 32	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
Mobil EAL Arctic 68	Polyolester	68 ISO / 300 SUS	NL PE 68
Mobil EAL Arctic 100	Polyolester	100 ISO / 500 SUS	Solest 100
Mobil EAL Arctic 220	Polyolester	220 ISO / 1000 SUS	Solest 220
Mobil Zerice S 68	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
Mobil Zerice S 100	Alkylbenzene	500 SUS / 100 ISO	NL AKB 500E
National NL AKB 500E	Alkylbenzene	500 SUS / 100 ISO	NL AKB 500E
National NL PE 32	Polyolester	32 ISO / 150 SUS	NL PE 32
National NL PE 68	Polyolester	68 ISO / 300 SUS	NL PE 68
National NL 150	Mineral Oil	150 SUS / 32 ISO	NL 150
National NL 300	Mineral Oil	300 SUS / 68 ISO	NL 300
National NL 500	Mineral Oil	500 SUS / 100 ISO	NL 500
National NL AKB 150	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
National NL AKB 200R	Alkylbenzene	200 SUS / 46 ISO	NL AKB 200R
National NL AKB 300	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
National NL WF 32	Mineral Oil	150 SUS / 32 ISO	NL WF 32
National NL WF 68	Mineral Oil	300 SUS / 68 ISO	NL WF 68
Nu Calgon C3	Mineral Oil	150 SUS / 32 ISO	NL 150
Nu Calgon C4	Mineral Oil	300 SUS / 68 ISO	NL 300
Nu Calgon C5	Mineral Oil	500 SUS / 100 ISO	NL 500
Shell Clavus 32	Mineral Oil	150 SUS / 32 ISO	NL WF 32
Shell Clavus 68	Mineral Oil	150 SUS / 32 ISO	NL WF 68
Soltex RF 200A	Alkylbenzene	200 SUS / 46 ISO	NL AKB 200R
Soltex RF 150	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
Soltex RF 300	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
Suniso 3GS	Mineral Oil	150 SUS / 32 ISO	NL 150
Suniso 4GS	Mineral Oil	300 SUS / 68 ISO	NL 300
Suniso 5GS	Mineral Oil	500 SUS / 100 ISO	NL 500
Totaline (Carrier/Carlyle) P903-01xx	Mineral Oil	150 SUS / 32 ISO	NL 150
Totaline (Carrier/Carlyle) P903-10xx	Polyolester	68 ISO / 300 SUS	NL PE 68
Totaline (Carrier/Carlyle) P903-12xx	Polyolester	220 ISO / 1000 SUS	Solest 220
Totaline (Carrier/Carlyle) P903-15xx	Polyolester	100 ISO / 500 SUS	Solest 100
Totaline (Carrier/Carlyle) P903-17xx	Polyolester	68 ISO / 300 SUS	NL PE 68
Totaline (Carrier/Carlyle) P903-20xx	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
Totaline (Carrier/Carlyle) P903-23xx	Polyolester	220 ISO / 1000 SUS	Solest 220
Trane 022	Mineral Oil	300 SUS / 68 ISO	NL 300
Trane 0080	Polyolester	32 ISO / 150 SUS	NL PE 32
Trane 0015	Mineral Oil	300 SUS / 68 ISO	NL 300
Trane 0027	Polyolester	32 ISO / 150 SUS	NL PE 32
Trane 0031	Mineral Oil	300 SUS / 68 ISO	NL 300
Trane 0042	Mineral Oil	150 SUS / 32 ISO	NL 150
Trane 0037	Polyolester	68 ISO / 300 SUS	NL PE 68
Trane 0043	Mineral Oil	150 SUS / 32 ISO	NL 150
Trane 0045	Mineral Oil	300 SUS / 68 ISO	NL 300
Trane 0046	Polyolester	68 ISO / 300 SUS	NL PE 68
Trane 0048	Polyolester	68 ISO / 300 SUS	NL PE 68
Trane 0075	Polyolester	68 ISO / 300 SUS	NL PE 68
Trane 0078	Polyolester	32 ISO / 150 SUS	NL PE 32
Trane 0086	Polyolester	100 ISO / 500 SUS	Solest 100
Trane 0152	Polyolester	46 ISO / 200 SUS	Solest 46
York A	Mineral Oil	300 SUS / 68 ISO	NL 300
York C	Mineral Oil	300 SUS / 68 ISO	NL 300
York D	Mineral Oil	150 SUS / 32 ISO	NL 150
York E	Mineral Oil	500 SUS / 100 ISO	NL 500
York F	Mineral Oil	150 SUS / 32 ISO	NL 150
York G	Polyolester	320 ISO / 1500 SUS	CP 4214-320
York H	Polyolester	68 ISO / 300 SUS	Solest 68, NL PE 68
York J	Polyolester	46 ISO / 200 SUS	Solest 46
York K	Polyolester	32 ISO / 150 SUS	Solest LT32, NL PE 32
York L	Polyolester	120 ISO / 600 SUS	Solest 120
York O	Polyolester	32 ISO / 150 SUS	Solest LT32, NL PE 32
York P	Polyolester	150 ISO / 750 SUS	CP 4214-150
York S	Polyolester	100 ISO / 500 SUS	Solest 100
York T	Polyolester	32 ISO / 150 SUS	NL PE 32
York V	Polyolester	32 ISO / 150 SUS	NL PE 32
Zerol 150	Alkylbenzene	150 SUS / 32 ISO	NL AKB 150
Zerol 200TD	Alkylbenzene	200 SUS / 46 ISO	NL AKB 200R
Zerol 300	Alkylbenzene	300 SUS / 68 ISO	NL AKB 300
Zerol 500	Alkylbenzene	500 SUS / 100 ISO	NL AKB 500E



For up-to-date OEM part numbers and cross reference recommendations visit our Lubricant Cross Reference Chart at: refrigerants.com/resources/lubricant-cross-reference/

GET IT NOW! Lubricant Cross Reference APP



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OIL



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 application

- 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	Price
		at 100°F (SUS)	at 40°C (cSt)		
SOLESTLT321G	1 Gal.	149	29.15	32	\$234.76
SOLESTLT325G	5 Gal.	149	29.15	32	\$1,013.58
SOLESTLT3255G	55 Gal.	149	29.15	32	\$7,552.24
SOLEST461G	1 Gal.	261	50.5	46	\$199.58
SOLEST465G	5 Gal.	261	50.5	46	\$837.70
SOLEST4655G	55 Gal.	261	50.5	46	\$7,481.08
SOLEST681G	1 Gal.	329	64	68	\$210.66
SOLEST685G	5 Gal.	329	64	68	\$893.08
SOLEST6855G	55 Gal.	329	64	68	\$6,526.00
SOLEST1001G*	1 Gal.	500	-	100	\$238.98
SOLEST1005G	5 Gal.	500	-	100	\$1,034.62
SOLEST1201G	1 Gal.	683	131	120	\$234.16
SOLEST1205G	5 Gal.	683	131	120	\$1,010.52
SOLEST12055G	55 Gal.	683	131	120	\$10,339.00
SOLEST1501G	1 Gal.	700	-	150	\$222.92
SOLEST1505G	5 Gal.	700	-	150	\$998.68
SOLEST15055G	55 Gal.	700	-	150	\$8,824.18
SOLEST1701G	1 Gal.	883	175.2	170	\$243.54
SOLEST1705G	5 Gal.	883	175.2	170	\$1,057.44
SOLEST17055G	55 Gal.	883	175.2	170	\$8,934.32
SOLEST1801G	1 Gal.	-	-	180	\$323.84
SOLEST2201G	1 Gal.	1034	215.9	220	\$243.12
SOLEST2205G	5 Gal.	1034	215.9	220	\$1,080.68
SOLEST22055G	55 Gal.	1034	215.9	220	\$9,584.38
CP4214-3201G	1 Gal.	1500	-	320	\$256.10

Continued...

*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



POLYOL ESTER OIL, SOLEST (CONT'D.)

Part No.	Container Size	Viscosity		ISO Grade	Price
		at 100°F (SUS)	at 40°C (cSt)		
CP4214-3205G	5 Gal.	1500	-	320	\$1,120.26
SOLEST3701G	1 Gal.	2053	385.96	370	\$267.84
SOLEST3705G	5 Gal.	2053	385.96	370	\$1,178.98
SOLEST37055G	55 Gal.	2053	385.96	370	\$10,180.70
CP4214-1505G	5 Gal.	-	-	150	\$1,093.58



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*	Price
WF32	32, (150 SUS)	1 Gal.	6	\$86.92
WF325	32, (150 SUS)	5 Gal.	1	\$183.78
1TD	68, (300 SUS)	1 Gal.	6	\$89.38
55TD	68, (300 SUS)	55 Gal.	1	\$3,823.54
5TD	68, (300 SUS)	5 Gal.	1	\$409.76



VPO1P

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*	Price
VPO1P	1 Pt.	24	\$12.86
VPO1Q	1 Qt.	12	\$20.98
VPO1G	1 Gal.	6	\$55.70
VPO5G	5 Gal.	1	\$250.60



998E02200

POLYOL ESTER OIL

COPELAND

Part No.	Container Size	Price
998E02200*	1 Qt.	\$75.34
998E02201*	1 Gal.	\$164.00



431346

POLYOL ESTER OIL

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	Price
		at 100°F (SUS)	at 40°C (cSt)		
431346	1 Gal.	100	18.9	ICI Emkarate RL22H	\$211.72
431445	5 Gal.	150	33.7	ICI Emkarate RL32H	\$975.64
431546	1 Gal.	200	46	ICI Emkarate RL46H	\$216.58
431646	1 Gal.	300	72.3	ICI Emkarate RL68H	\$212.16
431645	5 Gal.	300	72.3	ICI Emkarate RL68H	\$1,041.08
431826	1 Gal.	850	170	ICI Emkarate RL170H	\$264.22
431691	1 Gal.	425		ICI Emkarate RL85HB1	\$221.04
431466	1 Gal.	150	31.2	ICI Emkarate RL32CF	\$180.50



431914

POLYVINYLEETHER 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	Price
431914	1 Qt.	32	\$112.16
431924	1 Qt.	68	\$112.16



D01

OILER

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



Part No.	Description	Price
D01	Turbine Oiler	\$5.38

SPRAY LUBRICANT



61105

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



Part No.	Description	Price
61105	Penetrate HD spray lubricant, 12 Oz. Can	\$36.80

LUBRICANTS

REFRIGERANTS & LUBRICANTS

SPRAY LUBRICANT



10152

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	Price
490057	WD40® Smart Straw, Low VOC	12 Oz.	\$15.14



12AP

AEROKROIL

The oil that creeps and loosens frozen metal parts. Reduces the surface tension so that this amazing solvent creeps into openings as small as one millionth of an inch. Dissolves gum, dried grease, and oil -- without attacking the metal. Displaces water, provides lubrication and prevents rust.



Part No.	Description	Container Size	Price
12AP	Aerokroil oiler	10 Oz.	\$42.94

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.	Description	Container Size	Price
RT910T	Food Grade Silicone Grease	3 Oz.	\$23.96

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	Price
48140*	Hand Oil Pump	\$233.70

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	Price
RHB-82	Oil Refractometer	\$320.30

*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