

A-GAS[®]

PRODUCT INFORMATION GUIDE





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R22 Properties and Applications

R22 is a single component HCFC refrigerant that has historically been used for air conditioning, medium temperature and low temperature refrigeration. R22 causes ozone depletion and as a result is subject to legislation that is phasing down its use in Australia. R22 will still be available until 2030 and can be obtained as a recycled product (AHRI 700 standard) from A-Gas.

Physical Properties

- ✓ ASHRAE A1 safety classification
- ✓ Non Flammable & safe to use
- ✓ ODP 0.55
- ✓ GWP of 1700 (IPCC assessment report 2)
- ✓ Chemical name Chlorodifluoromethane
- ✓ Molecular weight is 86.5
- ✓ Boiling point at 1 ATM is -40.8 °C
- ✓ Critical Temperature is 96.2 °C

Applications

- ✓ Medium and low temperature commercial and industrial refrigeration and freezer rooms
- ✓ Cold stores, cabinets, water chillers & process cooling

Usage Instructions

- ✓ Compatible with mineral, alkylbenzene and POE lubricant
- ✓ R22 cannot be discharged to atmosphere. Always recover refrigerants into an A-Gas reclaim cylinder
- ✓ Charging can be carried out either in vapour or liquid phase

PT Chart

Temp °C	Pressure KPa
-38	92.762
-34	129.79
-30	172.12
-26	220.24
-22	274.68
-18	335.96
-14	404.65
-10	481.31
-6	566.53
-2	660.94
0	711.78
2	765.15
6	879.8
10	1005.6
14	1143.2
18	1293.3
22	1456.6
26	1634
30	1826.2
34	2034
38	2258.3



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R134a Properties and Applications

R134a is an HFC refrigerant used on its own as a pure refrigerant and also as a component in many blends. It is widely used in automotive air conditioning and medium temperature refrigeration in applications where R12 would have previously been used.

Physical Properties

- ✓ ASHRAE A1 safety classification
- ✓ Non Flammable & safe to use
- ✓ Zero ODP
- ✓ GWP of 1300 (IPCC assessment report 2)
- ✓ Chemical name - 1,1,1,2 Tetrafluoroethane
- ✓ Molecular weight is 102.3
- ✓ Boiling point at 1 ATM is -26.1°C
- ✓ Critical Temperature is 101.1 °C

Applications

- ✓ Automotive air conditioning systems
- ✓ Heat pumps, chillers
- ✓ Transport refrigeration, commercial cooling

Usage Instructions

- ✓ Compatible with POE and PAG lubricants
- ✓ Charging can be carried out either in vapour or liquid phase
- ✓ R134a cannot be discharged to atmosphere.
Always recover refrigerants into an A-Gas reclaim cylinder

PT Chart

Temp ° C	Pressure KPa
-38	-44.508
-34	-31.813
-30	-16.947
-26	0.34267
-22	20.323
-18	43.275
-14	69.492
-10	99.278
-6	132.95
-2	170.84
0	191.48
2	213.29
6	260.65
10	313.28
14	371.55
18	435.85
22	506.57
26	584.1
30	668.87
34	761.3
38	861.83



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R410A Properties and Applications

R410A is a zeotropic HFC blend of R125 and R32. In Australia R410A is a popular product for commercial and residential air conditioning systems as an alternative to R22. R410A exhibits higher pressures than R22 so is used in new equipment rather than as a retrofit gas.

Physical Properties

- ✓ ASHRAE A1 safety classification
- ✓ Non Flammable & safe to use
- ✓ Zero ODP
- ✓ GWP of 1725 (IPCC assessment report 2)
- ✓ Molecular weight is 72.6
- ✓ Boiling point at 1 ATM is -51.5 °C
- ✓ Critical Temperature is 71.8 °C

Applications

- ✓ Domestic and commercial air-conditioning

Usage Instructions

- ✓ Higher pressure - needs specific equipment
- ✓ Compatible with POE lubricants
- ✓ Charging must be done in liquid phase
- ✓ R410A cannot be discharged to atmosphere.
Always recover refrigerants into an A-Gas reclaim cylinder

PT Chart

Temp ° C	Bubble Pressure KPa
-38	90.647
-34	127.21
-30	168.97
-26	216.42
-22	270.04
-18	330.37
-14	397.92
-10	473.25
-6	556.93
-2	649.54
0	699.38
2	751.68
6	863.96
10	987.04
14	1121.6
18	1268.2
22	1427.7
26	1600.7
30	1788
34	1990.5



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R407C Properties and Applications

R407C is a zeotropic HFC refrigerant blend of R125, R32 and R134a. R407C is predominantly used in commercial and residential air conditioning systems and has very similar properties to R22. With the quota enforced decrease in R22 use, R407C has been used as an alternative to R22 in new equipment, it is also being used to replace R22 in some existing system retrofits.

Physical Properties

- ✓ ASHRAE A1 safety classification
- ✓ Non Flammable & safe to use
- ✓ Zero ODP
- ✓ GWP of 1526 (IPCC assessment report 2)
- ✓ Molecular weight is 86.2
- ✓ Boiling point at 1 ATM is -43.6 °C
- ✓ Critical Temperature is 86.0 °C

Applications

- ✓ Residential and commercial air conditioning systems
- ✓ Direct expansion fluid chillers and some commercial refrigeration systems

Usage Instructions

- ✓ Compatible with POE lubricants
- ✓ Charging must be done in liquid phase
- ✓ R407C cannot be discharged to atmosphere. Always recover refrigerants into an A-Gas reclaim cylinder

PT Chart

Temp ° C	Bubble Pressure KPa
-38	30.504
-34	56.264
-30	85.804
-26	119.49
-22	157.69
-18	200.8
-14	249.22
-10	303.35
-6	363.64
-2	430.5
0	466.54
2	504.4
6	585.77
10	675.08
14	772.82
18	879.46
22	995.5
26	1121.4
30	1257.8
34	1405.1



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R404A Properties and Applications

R404A is a zeotropic HFC refrigerant blend of R125, R143a and R134a. It is widely used in medium and low temperature refrigeration especially in the supermarket sector and for refrigerated transport. R404A was designed as a replacement for CFC R502 and closely matches its properties.

Physical Properties

- ✓ ASHRAE A1 safety classification
- ✓ Non Flammable & safe to use
- ✓ Zero ODP
- ✓ GWP of 3260 (IPCC assessment report 2)
- ✓ Molecular weight is 97.6
- ✓ Boiling point at 1 ATM is -46.5/-45.8 °C
- ✓ Critical Temperature is 72.1°C

Applications

- ✓ Transport refrigeration
- ✓ Supermarket display cases, cold rooms
- ✓ Ice machines - process cooling

Usage Instructions

- ✓ Compatible with POE lubricants
- ✓ Charging must be done in liquid phase
- ✓ R404A cannot be discharged to atmosphere. Always recover refrigerants into an A-Gas reclaim cylinder

PT Chart

Temp °C	Bubble Pressure KPa
-38	46.581
-34	74.551
-30	106.45
-26	142.64
-22	183.49
-18	229.37
-14	280.67
-10	337.8
-6	401.17
-2	471.21
0	508.87
2	548.36
6	633.05
10	725.77
14	826.99
18	937.2
22	1056.9
26	1186.7
30	1327
34	1478.5
38	1641.8



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R507 Properties and Applications

R507 is an azeotropic refrigerant blend containing R125 and R143a. It is widely used in medium and low temperature refrigeration especially in the supermarket sector. R507 was designed as a substitute for R502, with comparable physical and thermodynamic properties

Physical Properties

- ✓ ASHRAE A1 safety classification
- ✓ Non Flammable & safe to use
- ✓ Zero ODP
- ✓ GWP of 3985 (IPCC assessment report 2)
- ✓ Molecular weight is 97.6
- ✓ Boiling point at 1 ATM is -46.5/-45.8 °C
- ✓ Critical Temperature is 72.1°C

Applications

- ✓ Transport refrigeration
- ✓ Supermarket display cases, cold rooms
- ✓ Ice machines - process cooling

Usage Instructions

- ✓ Compatible with POE lubricants
- ✓ Charging can be carried out in vapor or liquid phase
- ✓ R507 cannot be discharge to atmosphere

Always recover refrigerants into an A-Gas reclaim cylinder

PT Chart

Temp °C	Bubble Pressure KPa
-38	46.581
-34	74.551
-30	106.45
-26	142.64
-22	183.49
-18	229.37
-14	280.67
-10	337.8
-6	401.17
-2	471.21
0	508.87
2	548.36
6	633.05
10	725.77
14	826.99
18	937.2
22	1056.9
26	1186.7
30	1327
34	1478.5
38	1641.8



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