

REFRIGERANT FACT SHEET R438A

CHARACTERISTICS

R438A is a non-ozone depleting HFC based refrigerant designed for the replacement of R22 in refrigeration and air conditioning direct expansion systems. R438A offers similar performance to R22.

Heatcraft recommends alternative refrigerants with substantially lower GWP.

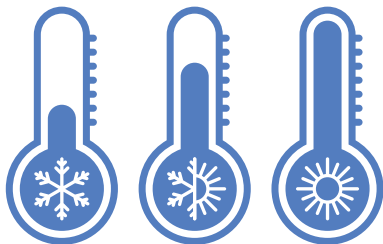
PERFORMANCE

- Capacity and energy efficiency is equivalent to R22
- Use of polyolester oil is recommended (contact OEM for more information)
- Refrigerant must be charged from the liquid phase to ensure accurate composition
- As with any retrofit, consideration should be given to all seals and gaskets and should be replaced at the time of retrofit

APPLICATIONS

Low, medium and high temperature applications including:

- Low and medium temperature refrigeration
- Air conditioning systems
- DX Chillers



PHYSICAL ATTRIBUTES

ODP: 0

GWP: 2059

Class/ Type: Zeotropic blend (A1)

Refrigerant Kind: HFC blend

Oil Type: Polyolester oil (POE), mineral oil and alkylbenzene

Glide: 3.6K

FEATURES

- Non-flammable (A1) and non-ozone depleting
- Can replace R22 in most cases, without the need to change the TX valves (adjustment may be required)
- Recommended to change to POE (polyolester oil) if concerned with oil return
- Allows for use of existing equipment

THERMODYNAMIC PERFORMANCE

- Matches R22 performance and efficiency
- Close mass flow to R22 avoiding the need to change components or pipework
- Lower discharge temperature and pressure compared to R22

PRODUCT PART NUMBERS

- **H438012** 12kg Cylinder
- **H438060** 60kg Cylinder

For safety, handling and storage guidelines please refer to the MSDS (available on Chemwatch)

PRESSURE TEMPERATURE CHART

Temp C°	Dew (kPa)	Bubble (kPa)
-44	-33	-8
-42	-26	1
-40	-17	12
-38	-9	22
-36	1	34
-34	11	47
-32	22	60
-30	34	75
-28	47	90
-26	60	106
-24	75	124
-22	91	142
-20	107	162
-18	125	183
-16	144	205
-14	165	228
-12	186	253
-10	209	279
-8	233	307
-6	258	337
-4	285	366
-2	314	398
0	344	432
2	276	468
4	409	505
6	445	544
8	482	585
10	521	628
12	562	673
14	604	719
16	649	768
18	696	819
20	746	873
22	797	928
24	851	986
26	907	1046
28	966	1109
30	1027	1174
32	1091	1242
34	1158	1312
36	1227	1385
38	1299	1461
40	1374	1539
42	1452	1620
44	1534	1705
46	1619	1792
48	1706	1883
50	1798	1976

PHYSICAL PROPERTIES

Class/ Type	Zeotropic Blend	Units	AHRI Specification
Formula	45% R125/ 44.2% R134a/ 8.5% R32/ 1.7% R600/ 0.6% R601a	Molecular Weight	99.24 g/mol
Kind	HFC	Boiling Point	-43°C
Appearance	Colourless	Critical Temperature	84.2°C
ODP	0	Critical Pressure	42.03 bar
GWP	2059	Critical Density	511.21 kg/m ³
ASHRAE Std. 34 Safety Class	A1		



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Quality control
ISO9001
- 

Local
manufacture
and decanting
- 

ARCTick Reporting
- 

Access to Kirby
refrigerant
technical
library
- 

Refrigerant recovery
with zero emissions
- 

Distribution and
delivery nationally
- 

Cylinder management
at your fingertips
through the
Gas2Go app
- 

Refrigerant
sample analysis

RFS438-030519