

# REFRIGERANT FACT SHEET

## R1233ZD

### CHARACTERISTICS

R1233zd is a single component, non-flammable ultra-low GWP refrigerant.

R1233zd is a long term refrigerant solution for R123. Normally used in low or negative pressure centrifugal chillers.

### PHYSICAL ATTRIBUTES

**ODP:** 0

**GWP:** 1

**Class/ Type:** Molecule (A1)

**Refrigerant Kind:** HFO

**Oil Type:** Mineral Oil

**Glide:** N/A

### PERFORMANCE

- Replacement for R123 in low-pressure centrifugal chillers
- R1233zd is suitable for new equipment not suitable for retrofit applications
- For optimal performance, it is recommended to use valves and fittings with plastic sealing washers. Avoid using fibre washers as leaks may occur
- R1233zd is a close performance match to R123

### FEATURES

- Non-flammable
- Ultra-low GWP replacement for R123
- Low pressure
- Innovative single component HFO

### THERMODYNAMIC PERFORMANCE

- Better capacity and improved efficiency to R123

### PRODUCT PART NUMBERS

Availability to be confirmed, contact your Kirby representative for more information.

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

### APPLICATIONS

High temperature applications including:

- Chillers
- Industrial  
Air conditioning



## PRESSURE TEMPERATURE CHART

Temp C°	Pressure (kPa)
-40	-95.7
-38	-94.9
-36	-94.1
-34	-93.1
-32	-92.1
-30	-90.9
-28	-89.7
-26	-88.3
-24	-86.7
-22	-85.0
-20	-83.2
-18	-81.2
-16	-78.9
-14	-76.6
-12	-74
-10	-71.2
-8	-68.1
-6	-64.9
-4	-61.3
-2	-57.5
0	-53.4
2	-49.0
4	-44.3
6	-39.3
8	-33.9
10	-28.1
12	-22.0
14	-15.5
16	-8.5
18	-1.2
20	6.6
22	14.9
24	23.7
26	33.1
28	42.8
30	53.3
32	64.2
34	75.7
36	87.9
38	100.7
40	114.1
42	128.2
44	143.0
46	158.6
48	174.9
50	191.9

## PHYSICAL PROPERTIES

Class/ Type	Molecule	Units	AHRI Specification
Formula	100% R1233zd	Molecular Weight	130.5 g/mol
Kind	HFO	Boiling Point	18.32°C
		Triple Point	-78°C
		Critical Temperature	165.6°C
Appearance	Colourless	Critical Pressure	35.71 bar
		Critical Volume	0.0021 m <sup>3</sup> / kg
ODP	0	Critical Density	476.31 kg/m <sup>3</sup>
GWP	1	Vapour Density at Boiling Point	5.71 kg/m <sup>3</sup>
		Liquid Density at 0°C	1326.79 kg/m <sup>3</sup>
ASHRAE Std. 34 Safety Class	A1	Vapour Pressure at 25°C	498.6 kPa
		Liquid Viscosity at 25°C	155.5 µPa-sec
		Vapour Viscosity	12.3 µPa-sec

**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**

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