Solstice® Refrigerants

Solstice® zd (R-1233zd)

Solstice

Solstice® zd: High-safety, low-GWP alternative to R-245fa and R-123

R-1233zd is an A1 pure HFO refrigerant with an ultra- low GWP designed to replace R-123 and R-245fa. It may be used in centrifugal water chillers, organic Rankine cycles or high-temperature heat pumps for hot water generation.

Components / Chemical Name:	ASHRAE Code:
Trans-1-chloro-3,3,3-trifluoropropene	R-1233zd

Technical specifications:

0	4.5	A1	POE
ODP	GWP	Safety classification	Compatible lubricants

Temperature Range: High

Replacement: R-245fa and R-123 in New Equipment. Retrofit

Type of replacement: Drop-In

Applications:

- Chillers
- Rankine Cycle
- Heat Pump and Aerothermal Systems

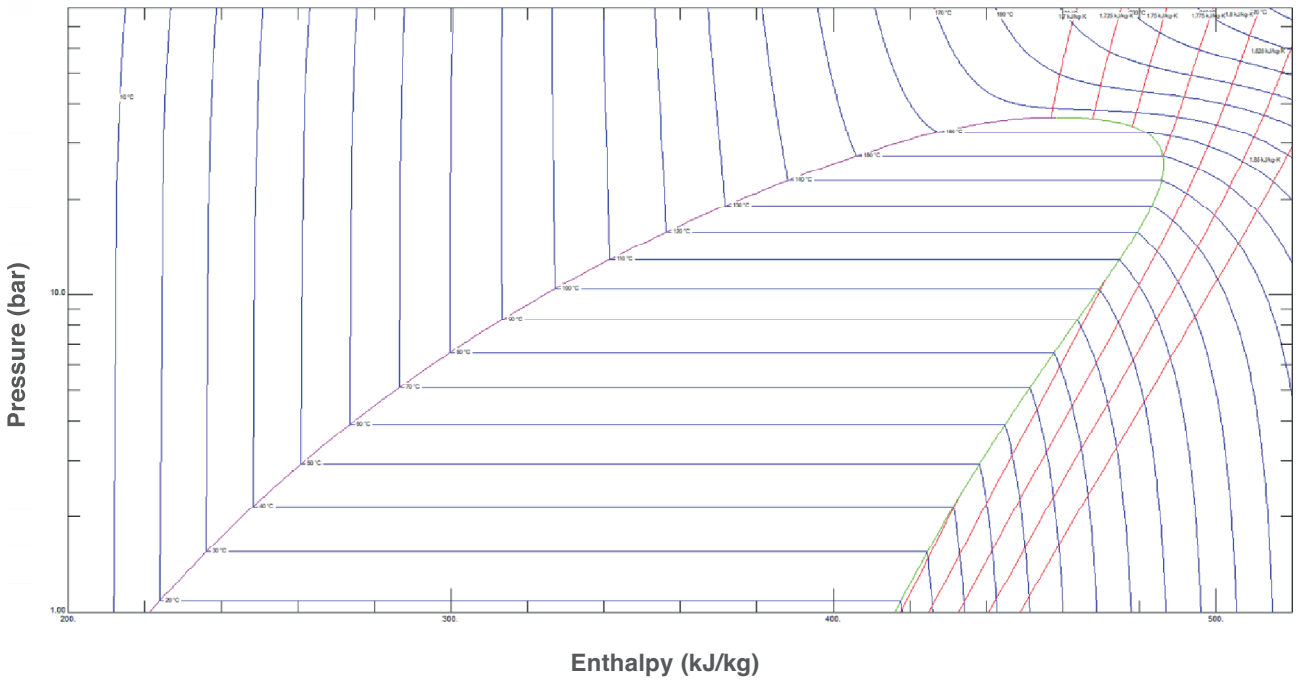
Packaging sizes for Solstice® zd:

- Cylinders
- Roll Drums
- ISO Tanks

Thermodinamic properties chart:

Temperature (ºC)	Absolute Pressure (bar)	Liquid Density (kg/l)	Gas Density (kg/l)	Liquid Enthalpy (kJ/kg)	Gas Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg K)	Gas Entropy (kJ/kg K)
-20	-0,82	1,366	0,0012	176,7	389,7	0,912	1,753
-15	-0,76	1,355	0,0015	182,5	393,1	0,934	1,750
-10	-0,70	1,344	0,0018	188,3	396,6	0,956	1,748
-5	-0,62	1,333	0,0023	194,1	400,1	0,978	1,747
0	-0,52	1,321	0,0028	200,0	403,6	1,000	1,745
5	-0,40	1,310	0,0035	205,9	407,1	1,021	1,745
10	-0,27	1,298	0,0042	211,9	410,6	1,043	1,745
15	-0,11	1,287	0,0051	217,8	414,1	1,064	1,745
20	0,08	1,275	0,0061	223,9	417,6	1,084	1,745
25	0,30	1,263	0,0072	229,9	421,1	1,105	1,746
30	0,55	1,251	0,0085	236,0	424,6	1,125	1,747
35	0,83	1,238	0,0100	242,2	428,0	1,145	1,748
40	1,16	1,226	0,0117	248,4	431,5	1,165	1,749
45	1,52	1,213	0,0136	254,6	434,9	1,185	1,751
50	1,93	1,200	0,0157	260,9	438,2	1,204	1,753
55	2,39	1,186	0,0181	267,3	441,6	1,223	1,755
60	2,91	1,173	0,0207	273,7	444,9	1,243	1,757

Pressure diagram chart:



Instructions:

Charge the system in liquid phase. When using an automotive gas charging unit, refill the unit's reservoir when it reaches 50% of its capacity.

Normative:

GRIT (Gases Research Innovation & Technology) is committed to the continuous improvement of our inbuilt Quality Control, Environment and Major Accident Prevention Systems as well as close collaboration with our product and service providers. The scope of the system includes the packaging, commercialisation, storage and innovation of technical gases and the management of residual fluorinated gas and halogenated solvents.

All this work is reflected in our certificates ISO 9001 & ISO 14001. GRIT also meets AHRI 700 standard for new and recycled refrigerants.

More information:

If you want more information about our products, contact us.

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