

# SOLSTICE<sup>®</sup> N15 (R-515B)

## Technical Data Sheet

Solstice N15 (R-515B) is a nonflammable azeotropic blend designed for chillers, heat pumps and high-ambient air conditioning systems. This hydrofluoroolefin (HFO) blend demonstrates environmental and performance benefits in new systems.

### PHYSICAL PROPERTIES

#### GENERAL PROPERTIES

Class/Type	Azeotropic blend
Formula	R-1234ze / R-227ea (91.1% / 8.9%)
Appearance	Colorless
ODP	0
GWP 5th IPCC	299
Flammability limits – ASTM E681-04 @21°C	Nonflammable
ASHRAE Standard 34 class	A1
LFL (%vol)	Nonflammable

#### UNITS

Molecular weight	117.5 lbm/lb-mol
Boiling temperature @ Opsig	-2.0°F
Critical temperature	228.0 °F
Critical pressure	507 psig
Critical volume	0.0322 ft <sup>3</sup> /lbm
Critical Density	31.03 lbm/ft <sup>3</sup>
Vapor Density At Opsig Boiling Point	0.367 lbm/ft <sup>3</sup>
Liquid Density At 32°F	78.56 lbm/ft <sup>3</sup>
Liquid Density At 77°F	73.65 lbm/ft <sup>3</sup>
Vapor Density At 77°F	1.69 lbm/ft <sup>3</sup>
Liquid Heat Capacity At 77°F	0.33 Btu/lbm-°F
Vapor Heat Capacity At 77°F	0.23 Btu/lbm-°F
Heat Of Vaporization At Boiling Point	81.7 Btu/lbm
Saturated Pressure At 77°F	57.45 psig
Liquid Thermal Conductivity At 77°F	0.042 Btu/hr-ft-°F
Vapor Thermal Conductivity At 77°F	0.008 Btu/hr-ft-°F
Liquid Viscosity At 77°F	0.4864 lbm/ft-hr
Vapor Viscosity At 77°F	0.0299 lbm/ft-hr



### BENEFITS

- Nonflammable
- Reduced GWP: 77% lower than R-134a
- Efficiency comparable to R-134a
- Zero glide
- Lower discharge temperature compared to R-134a
- Can be used in equipment designed for R-1234ze
- Higher critical temperature compared to R-134a

## MATERIALS COMPATIBILITY

Honeywell does not recommend the use of chlorinated solvents to clean refrigeration systems or components.

### Desiccants

Desiccant driers compatible with Solstice® N15 (R-515B) are commercially available. Individual drier manufacturers should be contacted for specific recommendations.

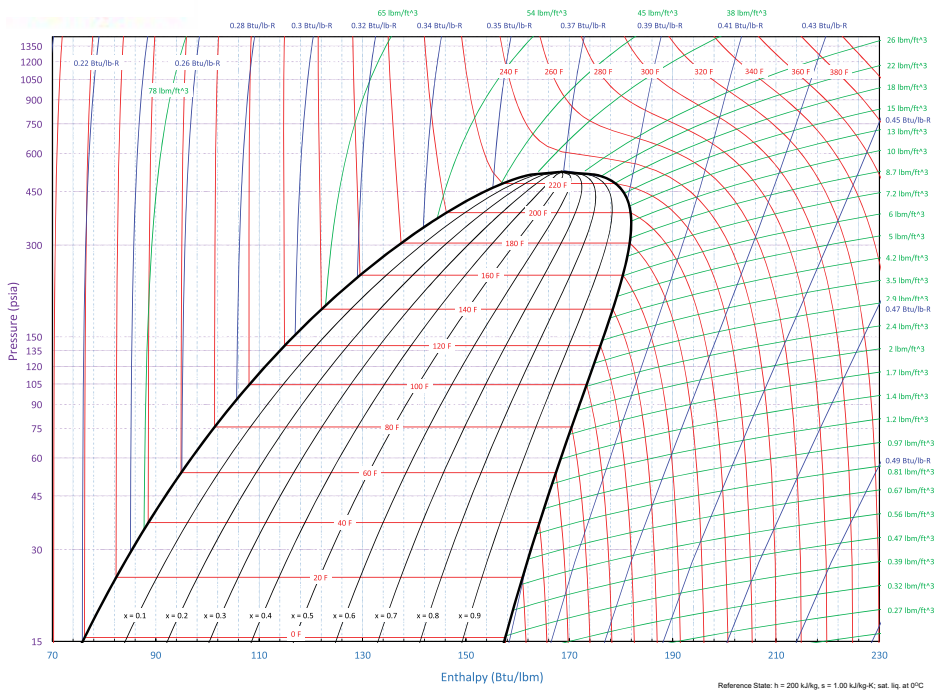
### Lubricants

Polyol ester (POE) oil is recommended for Solstice N15. Compressor manufacturers typically qualify specific lubricants for use with their products. Users should check with the equipment manufacturer for the recommended lubricants for their system.

### Plastics and Elastomers

Solstice N15 is compatible with most common materials. In the case of retrofit systems that may contain chlorinated materials, please contact your Honeywell sales representative for specific information.

## PRESSURE AND ENTHALPY



## SAFETY AND STORAGE

Honeywell recommends reading the Safety Data Sheet (SDS) before using Solstice N15. According to the compressed gas classification, Solstice N15 is nonflammable. It has similar storage and handling requirements to R-134a in bulk and cylinder.

## PACKAGE SIZES

Solstice N15 is available in 100lb and half ton refillable cylinders. For other packaging sizes please contact Honeywell distribution network.

## LEAK DETECTION

Leak detectors can be used for pinpointing specific leaks or for monitoring an entire room on a continual basis. Leak detection is important for refrigerant conservation, equipment protection and performance, reduction of emissions and protection of those coming in contact with the system. Customers should consult the equipment manufacturer for appropriate detectors.

## PT CHART

### R-515B

Temperature (°F)	Pressure (psig)
0	0.7
2	1.5
4	2.3
6	3.1
8	3.9
10	4.8
12	5.7
14	6.6
16	7.6
18	8.6
20	9.6
22	10.7
24	11.8
26	13.0
28	14.2
30	15.4
32	16.6
34	17.9
36	19.3
38	20.7
40	22.1
42	23.6
44	25.1
46	26.7
48	28.3
50	29.9
52	31.6
54	33.4
56	35.2
58	37.1
60	39.0
62	40.9
64	42.9
66	45.0
68	47.2
70	49.3
72	51.6
74	53.9
76	56.2
78	58.7
80	61.2
82	63.7
84	66.3
86.0	69.0
88.0	71.7
90.0	74.6
92.0	77.4
94.0	80.4
96.0	83.4
98.0	86.5

Temperature (°F)	Pressure (psig)
100.0	89.7
102.0	92.9
104.0	96.2
106.0	99.6
108.0	103.1
110.0	106.6
112.0	110.3
114.0	114.0
116.0	117.8
118.0	121.6
120.0	125.6
122.0	129.6
124.0	133.8
126.0	138.0
128.0	142.3
130.0	146.7
132.0	151.2
134.0	155.7
136.0	160.4
138.0	165.2
140.0	170.1
142.0	175.0
144.0	180.1
146.0	185.3
148.0	190.5
150.0	195.9
152.0	201.4
154.0	207.0
156.0	212.7
158.0	218.5
160.0	224.4
162.0	230.4
164.0	236.5
166.0	242.8
168.0	249.2
170.0	255.7

### OTHER POTENTIAL APPLICATIONS:

- Supermarket Refrigeration Systems
- Remote Condensing Units
- Cascade Refrigeration Systems
- Flooded Systems
- Stand-alone Units



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