

# 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	Colourless
ODP	0
GWP (IPCC AR5*)	292
Flammability limits – ASTM E681-04 @21°C	Nonflammable
ASHRAE Standard 34 class	A1
LFL (%vol)	Nonflammable
UNITS	
Molecular weight	117.48 kg/kmol
Boiling temperature	-18.9 °C
Critical temperature	108.7 °C
Critical pressure	35.8 bar
Critical volume	0.00202 m <sup>3</sup> /kg
Critical Density	494.74 kg/m <sup>3</sup>
Vapour Density At Opsig Boiling Point	5.88 kg/m <sup>3</sup>
Liquid Density At 0°C	1258.4 kg/m <sup>3</sup>
Liquid Density At 25°C	1179.8 kg/m <sup>3</sup>
Vapour Density At 25°C	27.1 kg/m <sup>3</sup>
Liquid Heat Capacity At 25°C	1.12 kJ/kg·°K
Vapour Heat Capacity At 25°C	1.66 kJ/kg·°K
Vapour Pressure At 25°C	497.4 kPa
Liquid Thermal Conductivity At 25°C	73.1 mW/m·°K
Vapour Thermal Conductivity At 25°C	13.9 mW/m·°K
Liquid Viscosity At 25°C	201.1 µPa·sec
Vapour Viscosity At 25°C	12.4 µPa·sec

\*For F-Gas reporting purposes, a different GWP value may be used.

### 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
- Lower discharge temperature and discharge pressure compared to R-134a
- R-515B matches the capacity and efficiency of R-1234ze, hence it can be used in all equipment that have been designed for R-1234ze
- R-515B has a higher critical temperature compared to R-134a which means it can reach higher water outlet temperature

## 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.

## 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 the following returnable package sizes:

- 60kg returnable cylinder
- 960kg vertical drum
- Half-ton tank
- ISO tank

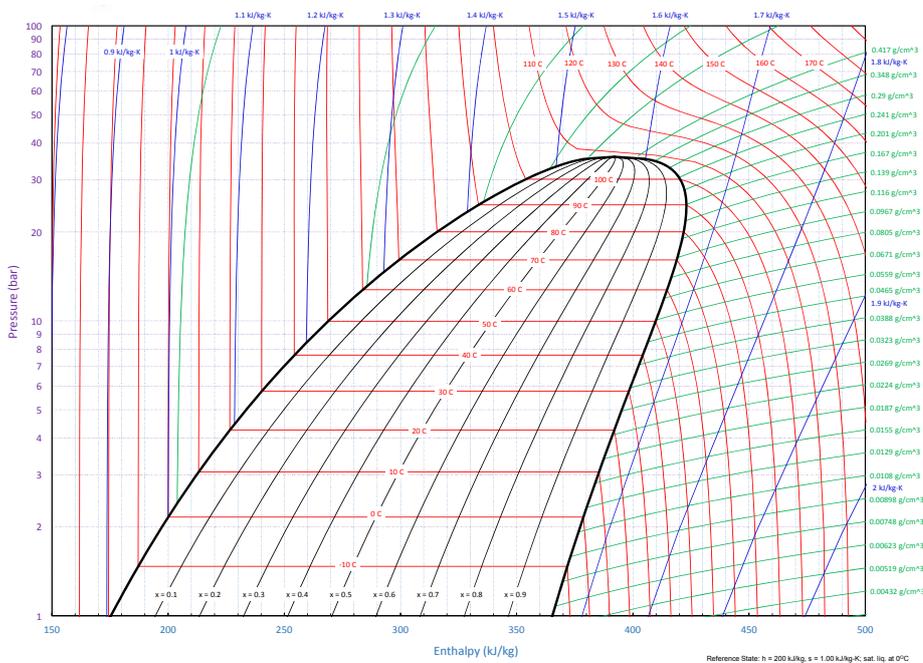
## LEAK DETECTION

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.

## OTHER POTENTIAL APPLICATIONS:

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

## PRESSURE AND ENTHALPY



## PT CHART

### R-515B

"Pressure (kPa)"	"Temperature (°C)"
100	-19.22
150	-9.51
200	-2.08
250	4.03
300	9.26
350	13.86
400	17.98
450	21.73
500	25.17
550	28.36
600	31.34
650	34.14
700	36.78
750	39.28
800	41.66
850	43.93
900	46.11
950	48.19
1000	50.19
1050	52.12
1100	53.99
1150	55.78
1200	57.53
1250	59.21
1300	60.85

"Pressure (kPa)"	"Temperature (°C)"
1350	62.44
1400	63.99
1450	65.50
1500	66.96
1550	68.40
1600	69.79
1650	71.16
1700	72.49
1750	73.79
1800	75.07
1850	76.32
1900	77.54
1950	78.74
2000	79.92
2050	81.07
2100	82.20
2150	83.32
2200	84.41
2250	85.48
2300	86.53
2350	87.57
2400	88.59
2450	89.59
2500	90.58



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