

**PRODUCT  
SPECIFICATION**



**Antifreeze Rad 3000 Universal  
TYPE SD155**

Number of revisions: 1

Date of last revision: January 15, 2008

**Technical Information:**

**Physical state :** Liquid

**Appearance:** Viscous, Green Color

**Application:** Universal Antifreeze

RAD 3000 Antifreeze is an advanced “fully-formulated” antifreeze inhibitor package that features a low-silicate, phosphate-free formula to provide trouble-free service in any vehicle and cooling systems with a high proportion of aluminum alloys. The product meets both ASTM heavy-duty and automotive specification and can be used in diesel engines without a pre-charge of additional supplemental coolant additives.

RAD 3000 meets and exceeds the following performance specifications:

ASTM D 3306, D 4985, D 6210, D4340, TMC RP 302A, TMC RP329, GSA CID A-A-53624, SAE J1941, SAE J1038, GM 1899M, GM1825M, Detroit Diesel 7SE298, Cummins 90T8-4, Mack, Freightliner 48-22880, Ford ESE-M97B44-A Section 3.1.1 & 3.1.2, John Deere JDM H24A1&C1, White/ GMC div. of Volvo, Chrysler MS 7170 Section A&B 1-4, Caterpillar Heavy Duty Coolant, Peterbilt and Kenworth

**Hall-Chem Code SD-155**

**WHMIS CLASSIFICATION:  
D2A, D2B**



Typical properties	Test Method	Limit Values	Typical Values
Specific Gravity @60°F (15.56 °C)	D-1122	1.1100 – 1.3145	1.1100-1.1200
Freezing Point 50 Vol % in Distilled Water: F° (C°)	D-1177	-34°F (-37°C) Max or Lower	-34°F (-37°C)
Boiling Point A F° (C°)	D-1120	Min 325°F (163°C)	325°F (164°C)
Effect: Automotive Finish	D-1882	No Effect	No Effect
Ash Content, Mass %	D-1119	5% Max	1.0%

pH: 50 Vol % in Water	D-1287	7.5 – 11.0	9.5-10.5
Chloride, PPM	By IC	25.0 Max	20.0
Water, Mass %/	D-1123	5 Max	5
Reserve Alkalinity, ml	D-1121	ReportB	6.8
Corrosion in Glassware Weght Loss, mg/specimen	D-1384		
Copper		10 Max	3
Solder		30 Max	7
Brass		10 Max	1
Steel		10 Max	0
Cast Iron		10 Max	2
Aluminum		30 Max	0
Simulated Service Weight Loss, mg/specimen	D-2570		
Copper		20 Max	2
Solder		60 Max	9
Brass		20 Max	2
Steel		20 Max	0
Cast Iron		20 Max	5
Aluminum		60 Max	3
Corrosion of Cast Aluminum Alloys at Heat Rejecting Surfaces mg/cm2/week	D-4340C	1.0 Max	0.3
Foaming Volume, ml	D-1881	150Max	50ml
Break Time, seconds		5 Max	3 sec
Cavitation or Erosion of the Water Pump	D-2809	8 Max	<8
<p><sup>A</sup> Some precipitate may be observed at the end of the test. This should not be cause for rejection.  <sup>B</sup> Agreed value between supplier and customer.  <sup>C</sup> This test is not required by ASTM D-4985; however, ASTM D-3306 requires it.</p>			
<b>Packing:</b>			
*Plastic Containers 1100 l and Metal Drums - 205 l * Plastic Containers of 4 l, 3.7 l and 1 L			
<p>These data are based on our current knowledge, experience and technical equipment. They do not relieve customers of carrying out their own tests and experiments, due to the great diversity of possible effects in processing and application of our products. They do not imply any legally binding assurances of certain properties and applications. The recipients of our products ought to abide by the existing legislation and regulations as well as possible reserved rights</p>			
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