PRODUCT SPECIFICATION

Antifreeze RAD 50/50 Universal
TYPE SD152

Number of revisions: 1
Date of last revision: January 19, 2008

Technical Information:

Physical state : Liquid
Appearance: Viscous, Green Color
Application: Universal Antifreeze

RAD 50/50 Universal Antifreeze is an advanced "fully-formulated" antifreeze inhibitor package ready to use 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.

The RAD 50/50 Universal meets and exceeds the following performance specifications: ASTM D 3306, D 4985, D 6210, 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 H24, Chrysler MS 7170, Caterpillar Heavy Duty Coolant, Peterbilt and Kenworth

Code SD-152
CAS-№: N/A
WHMIS CLASSIFICATION: D2A, D2B

Physicochemical Specifications:

Indices	Test Method	Limit Values	Typical Values
Specific Gravity @60°F	D-1122	1.055-1.065	1.060
Freezing Point : F° (C°)	D-1177	-34°F (-37°C) Max	34°F (-37°C)
Boiling Point A F° (C°)	D-1120	226°F (108°C) Min	226°F (108°C)
Effect: Automotive Finish	D-1882	No Effect	No Effect
Ash Content, Mass %	D-1119	5% Max	0.8%
pH:	D-1287	7.5 – 11.0	9.5
Chloride, PPM	By IC	25.0 Max	20.0
Water, Mass %/	D-1123	48% Max	47%
Reserve Alkalinity, ml	D-1121	Report B	3.4

Corrosion in Glassware Weght Loss, mg/specimen	D-1384		
Copper/ Cuivre		10 Max	2
Solder/ Brasure		30 Max	10
Brass/ Laiton		10 Max	1
Steel/ Acier		10 Max	0
Cast Iron/ Fonte		10 Max	0
Aluminum		30 Max	0
Simulated Service Weight Loss, mg/specimen Utilisation simulée	D-2570		
Copper/ Cuivre		20 Max	4
Solder/ Brasure		60 Max	16
Brass/ Laiton		20 Max	4
Steel/ Acier		20 Max	3
Cast Iron/ Fonte		20 Max	4
Aluminum		60 Max	3
Corrosion of Cast Aluminum Alloys at Heat Rejecting Surfaces mg/cm2/week	D-4340C	1.0 Max	0
Foaming Volume, ml Break Time, seconds Volume de mousse	D-1881	150Max 5 Max	50ml 3 sec.
Cavitation Erosion Rating: Pitting, Cavitation or Erosion of the Water Pump [C]	D-2809	8 Min	8

[A] Some precipitate may be observed at the end of the test. This should not be cause for rejection.
[B] Agreed value between supplier and customer.
[C] This test is not required by ASTM D-4985; however, ASTM D-3306 requires it.

Packing:

***Plastic Containers 1100 l and Metal Drums - 205 l * Plastic Containers of 4 l, 3.7 l and 1 L**

Hall-Chem Montreal
1270 Nobel
Boucherville, Québec
J4B 5H1
Canada
Tel: 450-645-0296 Fax: 450-645-0444
www.hall-chem.com

Hall-Chem Mississauga:
2155 Dunwin Drive Unit # 15
Mississauga, Ontario
L5L 4M1
Canada
Tel: 905-607-6800 Fax: 905-607-6888