



PENRAY 2797

Penray 2797 is an advanced antifreeze inhibitor package that features a low-silicate, phosphate-free formula to provide trouble-free service in any vehicle. Antifreeze made with virgin glycol and Penray 2797 may be used in any liquid-cooled engine.

Penray 2797 offers easy, economical, efficient blending procedures. A concentrated formula, Penray 2797 is added to pure glycol at 2.2 vol% to achieve the product claims. An addition of 2.0% water is optional to minimize product cost. The finished product will meet ASTM automotive (light duty) specifications and may also be used in diesel engines with traditional supplemental coolant additive.

Must be stored above 40°F (5°C).



BENEFITS

- Cost effective
- Easy liquid blending
- Phosphate free

SPECIFICATIONS

- ASTM D-4985
- ASTM D-3306
- ASTM D-4656 Auto Pre-diluted
- ASTM D-5345 H. D. Pre-diluted
- TMC RP-302 A

Using and maintaining a properly formulated coolant is one of the most important aspects of engine maintenance. 40% of engine breakdowns are a direct result of improper coolant maintenance.

The Penray Companies, Inc.

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Advanced Antifreeze Technologies

Penray 2797 @ 2.2% in 95.8% Ethylene Glycol and 2% Water
ASTM D-3306 and D-4985 Specifications

PENRAY 2797

Property	ASTM Test Method	ASTM Specification	Penray 2797 Performance
Specific Gravity @60°F	D-1122	1.110 – 1.3145	1.125
Freezing Point F° (C°)	D-1177	50 Vol % in Distilled Water: -34°F (-37°C) Max or Lower	50 Vol % in Distilled Water: -34°F (-37°C)
Boiling Point ^A F° (C°)	D-1120	325°F (163°C) Min	327°F (164°C)
Effect: Automotive Finish	D-1882	No Effect	No Effect
Ash Content, Mass %	D-1119	5% Max	0.53%
pH: 50 Vol % in Water	D-1287	7.5 – 11.0	10.4
Chloride, PPM	By IC	25.0 Max	20.0
Water, Mass %	D-1123	5 Max	3.2
Reserve Alkalinity, ml	D-1121	Report ^B	6.8
Corrosion in Glassware Weght Loss, mg/speciman	D-1384		
Copper		10 Max	0
Solder		30 Max	7
Brass		10 Max	0
Steel		10 Max	1
Cast Iron		10 Max	1
Aluminum		30 Max	0
Simulated Service Weight Loss, mg/speciman	D-2570		
Copper		20 Max	4
Solder		60 Max	17
Brass		20 Max	3
Steel		20 Max	2
Cast Iron		20 Max	2
Aluminum		60 Max	3
Corrosion of Cast Aluminum Alloys at Heat Rejecting Surfaces mg/cm ² /week	D-4340 ^C	1.0 Max	0.4
Foaming Volume, ml	D-1881	150Max	45ml
Break Time, seconds		5 Max	2.7 sec
Cavitation Erosion Rating: Pitting, Cavitation or Erosion of the Water Pump	D-2809	8 Min	10

^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.

Antifreeze made with virgin Ethylene Glycol and Penray 2797 @ 2.2% by volume will yield antifreeze which meets and exceeds the following performance specifications:

- ASTM D-3306
- TMC RP-302A
- Chrysler MS 7170
- ASTM D-4985
- GM 1825M
- Ford ESE-M97B44-A

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