



Advanced Antifreeze Technologies

PENRAY 2790N3G

Penray 2790N3G is an advanced “fully-formulated” antifreeze inhibitor package that features a low-silicate, phosphate-free formula to provide trouble-free service in any vehicle. Antifreeze made with virgin ethylene glycol and Penray 2790N3G at 2.2 vol % may be used in any liquid-cooled engine.

Penray 2790N3G offers easy, efficient blending procedures. A concentrated formula, Penray 2790N3G is added to pure propylene glycol at 2.0 vol % to achieve the product claims. An addition of 2.0% water is optional to minimize product cost. Finished product will meet both ASTM heavy-duty and automotive (light duty) specifications (see right) and may be used in diesel engines without additional supplemental coolant additives.

Must be stored above 40°F (5°C)

This product is also available in Clear Color (No Dye – Penray 2790N3C).



BENEFITS

- Cost effective
- Easy liquid blending
- One part system
- Fill-For-Life® Service
- OEM approved
- Phosphate free

SPECIFICATIONS

- ASTM D-6210
- ASTM D-6211 - PG
- ASTM D-4985
- ASTM D-3306
- ASTM D-4656 Auto Pre-diluted
- ASTM D-5345 H. D. Pre-diluted
- TMC RP-329 Type A
- 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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Penray 2790N3G @ 2.2% in 95.8% Ethylene Glycol and 2% Water
ASTM D-3306 and D-4985 Specifications

PENRAY 2790N3G

Property	ASTM Test Method	ASTM Specification	Penray 2790N3G 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	4.8
Reserve Alkalinity, ml	D-1121	Report ^B	6.8
Corrosion in Glassware Weght Loss, mg/speciman	D-1384		
Copper		10 Max	1
Solder		30 Max	8
Brass		10 Max	1
Steel		10 Max	0
Cast Iron		10 Max	0
Aluminum		30 Max	0
Simulated Service Weight Loss, mg/speciman	D-2570		
Copper		20 Max	3
Solder		60 Max	15
Brass		20 Max	3
Steel		20 Max	2
Cast Iron		20 Max	3
Aluminum		60 Max	3
Corrosion of Cast Aluminum Alloys at Heat Rejecting Surfaces mg/cm ² /week	D-4340 ^C	1.0 Max	0.0
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 2790N3G @ 2.2% by volume will yield antifreeze which meets and exceeds the following performance specifications:

- ASTM D-3306, D-4985, D-6210
- Chrysler MS 7170
- TMC RP-329 Type A
- GM 1825M
- Caterpillar Heavy Duty Coolant
- Detroit Diesel 7SE298
- GM 1899M
- John Deere JDM H24
- Peterbilt, Kenworth
- Cummins 90T8-4
- Freightliner 48-22880
- Mack
- Ford ESE-M97B44-A Section 3.1.1 & 3.1.2

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