



Advanced Antifreeze Technologies

PENRAY 2798N

Penray 2798N is a concentrated, nitrite-containing, carboxylate-based inhibitor system for heavy-duty diesel engines. This antifreeze inhibitor package features a nitrite-containing, silicate-free, phosphate-free formula to provide trouble-free service in newer diesel engines.

Antifreeze made with virgin glycol and Penray 2798N is compatible with CAT EC-1 specification antifreeze and other nitrated and non-nitrated organic acid technology (NOAT) formulations. Penray 2798N offers the easiest method of manufacturing NOAT technology antifreeze or engine coolant. Coolant contains 4.05 vol% 2798 N, antifreeze concentrate must contain 8.1 vol%.

Antifreeze made with 2798N may be operated 300,000 miles, boosted with an NOAT extender additive, and then operated to a total of 600,000 miles of service.

Store above 75°F (23.8°C).



BENEFITS

- Concentrated for lowest blending cost
- Extended service formulation
- Liquid blending
- One part system
- Compatible with Texaco® and Caterpillar® Extended Life and other “strawberry-red” NOAT coolants
- Silicate free
- Phosphate free
- Compatible with Non-Nitrated and Nitrated OAT

SPECIFICATIONS

- ASTM D-6210
- ASTM D-4985
- ASTM D-5345 H. D. Pre-diluted
- ASTM D-3306
- ASTM D-4656 Auto Pre-diluted
- TMC RP-329 Type 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 2798N @ 4.05% in 50% Ethylene Glycol
ASTM D-3306 and D-4985 Specifications

PENRAY 2798N

Property	ASTM Test Method	ASTM Specification	Penray 2798N Performance
Specific Gravity @60°F	D-1122	1.065 Min	1.0170
Freezing Point F° (C°)	D-1177	50 Vol % in Distilled Water: -34°F (-37°C) Max or Lower	50 Vol % in Distilled Water: -39°F (-37°C)
Boiling Point ^A F° (C°) @ 100% Boiling Point ^A F° (C°) @ 50%	D-1120	325°F (163°C) Min 226°F (107.8°C) Min	328°F (164.4°C) 226°F (107.8°C)
Effect: Automotive Finish	D-1882	No Effect	No Effect
Ash Content, Mass %	D-1119	5% Max	0.35
pH: 50 Vol % in Water	D-1287	7.5 – 11.0	9.5
Chloride, PPM	D-5827	25.0 Max	<2.0
Reserve Alkalinity, ml	D-1121	12.8	12.8
Foaming Tendencies	D-1881	Break: 5 Sec Volume: 150 ml	Break: 1.2 sec Volume: 50ml
Corrosion in Glassware Weght Loss, mg/speciman	D-1384		
Copper		10 Max	0
Solder		30 Max	2
Brass		10 Max	0
Steel		10 Max	0
Cast Iron		10 Max	0
Aluminum		30 Max	0
Simulated Service Weight Loss, mg/speciman	D-2570		
Copper		20 Max	1
Solder		60 Max	2
Brass		20 Max	1
Steel		20 Max	1
Cast Iron		20 Max	1
Aluminum		60 Max	10
Corrosion of Cast Aluminum Alloys at Heat Rejecting Surfaces mg/cm ² /week	D-4340 ^B	1.0 Max	0.45
Cavitation Erosion Rating: Pitting, Cavitation or Erosion of the Water Pump	D-2809	8 Min	9

^A Some precipitate may be observed at the end of the test. This should not be cause for rejection.

^B This test is not required by ASTM D-4985; however, ASTM D-3306 requires it.

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