



## Advanced Antifreeze Technologies

# PENRAY 2705

Penray 2705 is an advanced hybrid antifreeze inhibitor package. Antifreeze made from Penray 2705 is fully compatible with the new Ford and Chrysler antifreezes and may be used in diesel engines without a pre-charge of supplemental coolant additive.

A pallet of Penray 2705 consists of a 575 lb. drum of Part A liquid and three fiber drums containing a total of 840 lbs. Part B powder. One pallet should be blended with 2162 gals. ethylene glycol. Part A should be added to the glycol first, in the same manner as other Penray inhibitors. Part B should then be blended in manner similar to that used for Borax. The volume of antifreeze produced will be 2276 gallons.

Similarly:

250 gals. glycol requires 66.5 lbs. Part A and 97.1 lbs. Part B to give 263 gals. antifreeze.

500 gal. glycol requires 133 lbs. Part A and 194.2 lbs. Part B to give 526 gals. antifreeze.

1000 gal glycol requires 266 lbs. Part A and 388.4 lbs. Part B to give 1052 gals. antifreeze.

Must be stored above 40°F (5°C)

Blending instructions available at [www.penray.com](http://www.penray.com) in Power Fleet section of website.



### **BENEFITS**

- Cost effective
- Fill-For-Life® Service

### **SPECIFICATIONS**

- TMC RP-329 Type A
- ASTM D-6210
- ASTM D-3306
- TMC RP-302A
- ASTM D-4985

*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 2705 in Ethylene Glycol ASTM D-3306 and D-4985 Specifications

# PENRAY 2705

Property	ASTM Test Method	ASTM Specification	Penray 2705 Performance
Specific Gravity @60°F	D-1122	1.110 – 1.3145	1.1385
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 <sup>A</sup> F° (C°)	D-1120	325°F (163°C) Min	325°F (164°C)
Effect: Automotive Finish	D-1882	No Effect	No Effect
Ash Content, Mass %	D-1119	5% Max	2.53%
pH: 50 Vol % in Water	D-1287	7.5 – 11.0	8.18
Chloride, PPM	By IC	25.0 Max	20.0
Water, Mass %	D-1123	5 Max	5
Reserve Alkalinity, ml	D-1121	Report <sup>B</sup>	24.6
Corrosion in Glassware Weght Loss, mg/speciman	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/speciman	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/cm <sup>2</sup> /week	D-4340 <sup>C</sup>	1.0 Max	0.3
Foaming Volume, ml		150Max	80ml
Break Time, seconds	D-1881	5 Max	2.3 sec
Cavitation Erosion Rating: Pitting, Cavitation or Erosion of the Water Pump	D-2809	8 Min	9

<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.

Antifreeze made with virgin Ethylene Glycol and Penray 2705 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-M97B51-A1 Section 3.4 & 3.7

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