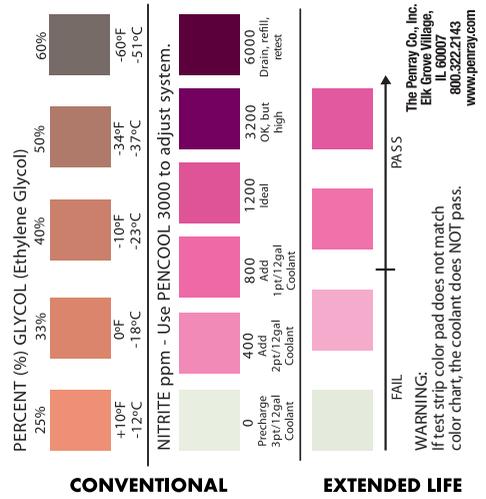


Typical Over-the-Road Cooling System

Up To 100 Gallons • 50% Antifreeze/50% Water

When testing a cooling system with a capacity up to 100 gallons, it is recommended that you use Penray Universal 3-Way Test Strips. This will allow you to check both the freeze point and nitrite levels of the coolants. The color block to the right is a sample of what's on the bottle of test strips that you will use to do the testing.



Nitrite Test: Follow the directions on the test strip bottle. The ideal level of nitrite 1600 ppm. Based upon the reading of the test strip, use the following recommendations to make your adjustments. If the reading is:

-0-	Pre-charge then add 1 pint of Pencool 3000 for every 4 gallons of cooling system capacity
-400-	Add 1 pint of Pencool 3000 for every 8 gallons of cooling system capacity
-800-	Add 1 pint of Pencool 3000 for every 12 gallons of cooling system capacity
-1600-	The system is OK
-3200-	The system is OK
-6000-	Drain the system, refill it, and then retest it.

Freezepoint Test: See the chart below

Penray Coolant Chart for Maintaining 50% Antifreeze

Freeze Point (deg. F) Vs. Percent Antifreeze

System Cap. (Gal)	Temperatures (+32° F to -5° F)																				System Cap. (Gal)	
	+32	+25	+20	+15	+10	+5	-5	-12	-23	-34	-50	-65	-75	-84	-70	-55	-43	-30	-5			
	Drain Coolant and Add Antifreeze (Quarts)											Drain Coolant and Add Water (Quarts)										
5	10	9	8	8	7	6	4	3	2	0	2	3	4	6	7	8	8	9	10	5		
6	12	11	10	9	8	7	5	4	2	0	2	4	5	7	8	9	10	11	12	6		
7	14	12	11	11	9	8	6	5	2	0	2	5	6	8	9	11	11	12	14	7		
8	16	14	13	12	11	9	7	5	2	0	2	5	7	9	11	12	13	14	16	8		
9	18	16	15	14	12	10	8	6	3	0	3	6	8	10	12	14	15	16	18	9		
10	20	18	17	15	13	11	9	7	3	0	3	7	9	11	13	15	17	18	20	10		
11	22	20	19	17	15	13	9	7	3	0	3	7	9	13	15	17	19	20	22	11		
12	24	22	20	18	16	14	11	8	4	0	4	8	11	14	16	18	20	22	24	12		
13	26	23	22	20	17	15	12	9	4	0	4	9	12	15	17	20	22	23	26	13		
14	28	25	23	22	19	16	13	9	4	0	4	9	13	16	19	22	23	25	28	14		
15	30	27	24	23	20	17	14	10	5	0	5	10	14	17	20	23	24	27	30	15		
16	32	28	26	24	21	18	15	11	5	0	5	11	15	18	21	24	26	28	32	16		
17	34	30	28	26	23	19	15	11	6	0	6	11	15	19	23	26	28	30	34	17		
18	36	32	30	27	24	21	17	12	6	0	6	12	17	21	24	27	30	32	36	18		
19	38	34	32	29	26	22	18	13	7	0	7	13	18	22	26	29	32	34	38	19		
20	40	36	33	30	27	23	18	13	7	0	7	13	18	23	27	30	33	36	40	20		

If the reading on your refractometer does not appear on the chart, the solution is over-concentrated. Drain your system and start over by adding a 50/50 mix of Fleetcharge® or DDC PowerCool® Antifreeze and Water to your engine's system.

**Example, if the temperature for a 12 gallon system is -23° F, drain four quarts of coolant and add 4 quarts of pure antifreeze. Or, if the temperature for an 8 gallon system is -50° F, drain 2 quarts of coolant and add 2 quarts of water.*