



PRODUCT DATA SHEET

DAVID WEBER OIL CO.

601 Industrial Road · Carlstadt, NJ 07072 | 201.438.7333 phone | 201.438.3178 fax

www.weberoil.com

GIBRALTAR PERMANENT ANTI-FREEZE HD

USE RECOMMENDATIONS

Gibraltar PAF HD Formula meets or exceeds performance requirements for both automotive and Heavy Duty cooling systems, including those with aluminum heat rejecting components such as aluminum cylinder heads, water pumps and radiators. It provides corrosion protection for all cooling system metals and is compatible with antifreeze/coolants of all major producers. Ethylene Glycol base antifreeze/coolant should not be used in concentrated form in your vehicle. A 50% dilution is generally recommended for best balanced protection against corrosion and summer boiling. Do not dilute to less than 33-1/3%. (Maximum freeze protection is at 68% if required.) Water quality can be an important factor affecting the long-term corrosion protection of any antifreeze. Avoid use of contaminated or heavily chlorinated water. Use of additional cooling system additives is not needed in automotive systems and is specifically discouraged. The recommended change interval is one year.

For HVAC systems, recreational vehicles, and protection of other hydronic systems, consult your sales representative for appropriate product recommendations.

SPECIFICATIONS AND APPROVALS

Gibraltar PAF HD meets or exceeds performance requirements of GM-1825M, GM-1899M, Chrysler MS7170, Ford ESE M97B44A, Cummins 90T8-4. It also passes ASTM D3306, ASTM 4985, SAE J 1035, SAE J 1941, TMC RP-302B and Federal Spec. O-A-548D. **Gibraltar PAF HD** passes the ASTM D4340 test for corrosion protection of cast aluminum alloys under heat rejecting conditions and meets the low silicate requirements of GM-6038, as recommended by the specification requirements of A.A.M.V.A. and the A.T.A. fleet purchasing specifications of the Heavy Duty Engine manufacturers.

HOSES AND GASKETS

No adverse effect on gaskets, hoses, or automotive finishes.

CAUTIONARY INFORMATION

Ethylene Glycol, the major component in **Gibraltar PAF HD**, is poisonous to humans and animals when ingested. Store only in closed containers, with complete cautionary warning information thereon, in a cool, secure place, out of reach of children. Do not use in any system connected with potable water. Consult your sales representative for our product for this purpose.

METAL PROTECTION

(Corrosion Weight Loss Data, mg per test coupon, typical)

	ASTM D1384 SPECIFICATION (glassware)	PENRAY PERFORMANCE
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

	ASTM D2570 SPECIFICATION (simulated test engine)	PENRAY PERFORMANCE
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

TYPICAL COMPOSITION

	% by Weight
Ethylene Glycol, Antifreeze Grade	95.8%
Penray 2797 Corrosion Inhibitors	2.2
Total Water (ASTM D1123)	3.2

TYPICAL PROPERTIES

	ASTM TEST SPECIFICATION	PENRAY PERFORMANCE
Specific Gravity, 60/60 C	(ASTM D1122) 1.110-1.145	1.125
Reserve Alkalinity	(ASTM D1121) Report	6.8
pH, 50% by volume	(ASTM D1287) 7.5 to 11.0	10.4
Ash	(ASTM D1119) 5.00% max	.53%
Foam Test (ASTM D1881)		
Foam Volume	150 max	45 ml.
Break Time	5 max	2.7 seconds
Boiling Point, F(C)	(ASTM D1120) 325(163) min	327(164)
Freezing Point, F(C)	(ASTM D1177) -34(-37) max or lower -34(-37)	
50% vol in distilled water-34 F max.		