

# Antifreeze BS Afnor

## Technical Data Sheet

**ANTIFREEZE BS AFNOR** is an ethylene glycol based engine coolant concentrate formulated for use in all engines including those constructed from aluminium alloys. It employs established inhibitor technology and is nitrite, amine and phosphate (NAP) free and includes borate and silicate. BTC classification Type 2E.

**ANTIFREEZE BS AFNOR** uses sophisticated silicate stabilisation technology to eliminate the potential for formation of silicate gel often observed with inferior products whilst other additives ensure good compatibility with hard water and prevent the formation of scale that can result from use of hard water.

## Physical Properties

Parameter		Method	BS AFNOR	ASTM D3306
Appearance		Visual	Clear liquid *	Not Specified
Specific Gravity 15°C/15°C		ASTM D 4052	1.119	1.110 – 1.145
Equilibrium Reflux Boiling Point °C		ASTM D 1120	170	163 min
Freezing Point °C (50% Dilution by vol.)		ASTM D 1177	-38	-37 max
Freezing Point °C (33% Dilution by vol.)		ASTM D 1177	-18	
pH (50% vol.)		ASTM D 1287	7.8	7.5 – 11.0
Reserve Alkalinity 0.1N HCl		ASTM D 1121	20.5	Report
Water Content		ASTM D 1123	4	5 max
Foaming Properties	Vol. (ml)	ASTM D1881	10	150 max
	Break (s)		1	5 max

\* Product can be supplied colourless or dyed in accordance with customer requirements.

## Corrosion Protection

### ASTM D1384 Glassware Corrosion Test Results

	Weight Loss mg/ Coupon					
	Copper	Solder	Brass	Steel	Cast Iron	Aluminium
ASTM D3306 (max)	10	30	10	10	10	30
ANTIFREEZE BS AFNOR	0.9	4.8	0.6	-0.4	-0.7	1.0

### ASTM D 4340 Corrosion of Aluminium under heat rejecting conditions

	Weight Loss mg/ cm <sup>2</sup> /week
ASTM D 3306 (max)	1.0
ANTIFREEZE BS AFNOR	<0.1

### ASTM D2570 Simulated Service Corrosion Test

	Weight Loss mg/ Coupon					
	Copper	Solder	Brass	Steel	Cast Iron	Aluminium
ASTM D2570 (max)	20	60	20	20	20	60
ANTIFREEZE BS AFNOR	2.2	12.1	3.2	4.2	2.8	4.5

### ASTM D2809 Cavitation Corrosion Characteristics of Aluminium Pumps

	Visual Rating
ASTM D 2809 (min)	8
ANTIFREEZE BS AFNOR	10

*All of the above figures are typical values and do not constitute a specification.*

## Freeze Protection

	Concentration by Volume %				
	25	33	40	50	60
Specific Gravity 20/4°C	1.030	1.045	1.060	1.074	1.087
Freeze Protection * °C	-12	-22	-27	-40	-56

*\*Average of Freezing Point and Pour Point*

## Performance Standards

**ANTIFREEZE BS AFNOR** exceeds the requirements of most European and International Standards including: ASTM D3306, ASTM D 4985, SAE J 1034, BS 6580 (1992), AFNOR NF R15-601

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