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# BS-AFNOR Coolant

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## 1 Description

**BS-Afnor coolant** is an economical coolant concentrate providing frost and corrosion protection. The coolant is recommended when price considerations take priority over quality. Exempt from potentially harmful additives such as nitrites, amines and phosphates, the coolant also contributes to a safer environment.

For the perfect operation of water-cooled internal combustion engines, the engine and cooling system have to be adequately protected from corrosion and frost damage.

To that purpose a coolant is added to the cooling water.

**BS-Afnor coolant** offers the following benefits to the user:

- **corrosion protection, also for non-ferrous metals**
- **frost protection**
- **boiling protection**
- **miscibility**
- **seal compatibility**
- **hard water stability**
- **low cost**

## 2 Application

**BS-Afnor coolant** provides year-round frost and corrosion protection. It is recommended to use at least 33 vol. % of **BS-Afnor coolant** in the coolant solution. This provides

frost protection to  $-17^{\circ}\text{C}$ . Concentrations higher than 70 vol. % are not recommended; maximum frost protection (about  $-69^{\circ}\text{C}$ ) is obtained at a concentration of 68 vol. %.

## 3 Standards

**BS-Afnor coolant** is conformable to British Standard BS6580:1992 and BS 6580:2010\*

\* For product containing 25% or more 1,2 ethane diol which is supplied as packaged goods intended for retail to the general public, BS 6 580:2010 requires the addition of minimum 25 ppm of denatonium benzoate, or the package has to be fitted with a childproof closure.

## 4 Availability

**BS-Afnor coolant** is available in bulk and various packages in different colours and with/without bittering agent. Please contact

your local **arteco** sales manager on availability of packages, dilutions and colours.

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### 5 Storage requirements

The product should be stored above -20°C and preferably at ambient temperatures. Periods of exposure to temperatures above 35°C should be minimized.

As with any antifreeze coolant, the use of galvanized steel is not recommended for pipes or any other part of the storage/mixing installation.

Further, it is strongly advised not to expose the coolant in translucent packages to direct

sunlight because this can degrade the colour dyes present in the coolant, and result in fading of the colour or discoloration over time. This reaction can be accelerated if coupled with high ambient temperatures. It is therefore advisable to store coolant filled in translucent packages indoors to avoid this issue.

### 6 Toxicity & safety

For toxicity and safety data we refer to the material safety data sheet. The transport is not regulated. Labeling as for any MEG based coolant is required : Xn : R22 (Harmful

if swallowed) and S2 (Keep out of reach of children). This product should not be used to protect the inside of drinking water systems against freezing.

*All information contained in this product Information leaflet is accurate to the best of our knowledge and belief as at the date of issue specified. However, the Company makes no warranty or representation, express or implied, as to the accuracy or completeness of such information.*

# BS-AFNOR Coolant

## Addendum - Technical information

Chemical and physical properties  
BS-Afnor Coolant

undiluted product	Afnor R-15-601 requirements	BS 6580 requirements	BS-Afnor coolant	
ethylene glycol	base	base	94,4 % w/w	
water content NFT 78-104	5 % w/w max		5 % w/w max	
ash content	3 % w/w max		1,0 % w/w typ.	
nitrite, amine, phosphate			nil	
colour			Colourless or coloured on request	
density, 20°C, ASTM D4052	1.050 to 1.150		1,12 typ.	
equilibrium boiling point, ASTM D1120	> 155°C	> 150°C	171°C typ.	
reserve alkalinity (pH 5.5), ASTM D1121	10 min		14,5 typ.	
storage stability	1 year		> 1 year	

Chemical and physical properties  
dilutions

diluted product	Afnor R-15-601 requirements	BS 6580 requirements	50 % dilution	33 % dilution
pH	7 à 8,5		8,1 typ.	8,3 typ.
foaming properties at 88°C ■ break time		50 ml max 5 sec. max		50 ml max 5 sec. max
freezing point, initial crystallization, ASTM D1177	-15°C max.	-33°C max	-35°C typ.	-17°C typ.
effect on non-metals	no effect		no effect	
staining characteristics	no effect			no effect
hard water stability	no precipitate	< 0.5 ml	< 0.5 ml no precipitate	

## BS-AFNOR Coolant

### Afnor R 15-602-7 / ASTM D1384 glassware corrosion tests

	weight loss in mg/coupon <sup>1</sup>					
	brass	copper	solder	steel	cast iron	aluminium
ASTM D3306 (max)	10	10	30	10	10	30
Afnor R 15-601 (max)	-5 to 5	-5 to 5	-5 to 5	-2,5 to 2,5	-4 to 4	-10 to 20
<b>BS-Afnor coolant</b>	-0.6	-0.6	0.2	1.4	0.9	0.0

### BS 5177 hot and cold immersion test

	weight loss in mg/coupon <sup>1</sup>					
	brass	copper	solder 97 %Pb	Steel	Cast iron	aluminium
BS 6580 (max)	10	10	15	10	10	15
<b>BS-Afnor coolant</b>						
hot	-0.1	0.0	4.6	-0.2	-0.3	-2.3
cold	-	-	-	-	-	-

### Afnor R 15-602-8 aluminium heat transfer test

	weight loss in mg/cm <sup>2</sup> /week
Afnor R 15-601 (max)	-1.0 à 1.0
<b>BS-Afnor coolant</b>	0.63
BS 6580 (max)	1.0
BS 5117 (max)	1.0
<b>BS-Afnor coolant</b>	0.19

<sup>1</sup> Weight loss AFTER chemical cleaning according to ASTM procedure. Weight gain is indicated by a - sign.