

# Corrosion Inhibitor BSB

## 1 Description

**Corrosion Inhibitor BSB** is a highly cost-efficient aqueous super concentrate that can be used to formulate coolants that provide frost and corrosion protection.

As this inhibitor package is fully organic, and exempt from potentially harmful additives such as nitrites, amines and phosphates, the coolant contributes to a safer environment.

**Corrosion Inhibitor BSB** is also free of silicates and borates.

Coolants based on **Corrosion Inhibitor BSB** provide an economical and favourable solution for multiple coolant system applications. It is recommended to change the coolant every year.

## 2 Benefits

Coolants formulated from **Corrosion Inhibitor BSB** offer the following benefits to the user:

- corrosion protection
- frost protection
- boiling protection
- miscibility
- hard water stability
- seal compatibility
- low cost

## 3 Blending engine coolant from Corrosion Inhibitor BSB

A coolant concentrate can be blended from **Corrosion Inhibitor BSB** by simply mixing the following ingredients at ambient temperatures:

<i>Ingredient (wt %)</i>	Formulation 1	Formulation 2	Formulation 3
Ethylene glycol	91.00		94.00
Propylene glycol		94.00	
<b>Corrosion Inhibitor BSB</b>	6.00	6.00	6.00
Water	3.00		
Colouring agent	optional	optional	optional
Bitterant	optional		optional

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## 4 Application

**Corrosion Inhibitor BSB** mixed at 6% wt in monoethylene glycol provides year-round frost and corrosion protection. This package can also be used in monopropylene glycol. It is recommended to use at least 33 vol.% of the antifreeze in the final coolant solution. This provides frost protection to -18°C. Concentrations higher than 70 vol.% are not

recommended as the maximum front protection is reached.

As for any coolant, Artec recommends the use of deionised or distilled water to prepare ready-to-use dilutions for optimal performance and controlled quality. We refer to our dedicated product information leaflet for water quality recommendations.

## 5 Standards

Coolants made from **Corrosion Inhibitor BSB** and blended according to formulation 1 and 3 are conformable to British Standard BS6580:1992 or BS 6580:2010\*.

Coolants blended according to formulation 3 also conforms to ASTM D3306 as well as to the requirements of the Chinese Industrial Standards NB/SH/T 0521-2010 and the National Standard GB 29743-2013 LEC.

*\* For product containing 25% or more 1,2 ethane diol (MEG) which is supplied as packaged goods intended for retail to the general public, BS 6580:2010 requires the addition of minimum 25 ppm of denatonium benzoate (bitterant), or the package has to be fitted with a childproof closure.*

## 6 Availability

**Corrosion Inhibitor BSB** is available in bulk and 1000 L containers. Please contact your local area sales manager on availability of colours.

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## 7 Storage requirements & Product handling

The product should be stored above -5°C and preferably at ambient temperatures. Periods of exposure to temperatures above 35°C should be minimized.

**Corrosion Inhibitor BSB** can be stored for minimum 2 years in unopened containers without any effect on the product quality or performance. It is strongly recommended to use new dark containers and not recycled ones.

Exposure to direct sunlight might degrade the colour dyes present in the coolant or cause discoloration, although the product

itself and its properties remain stable. This reaction can be accelerated if coupled with high ambient temperatures.

At higher temperatures and in open containers considerable amounts of water can evaporate and this may result in solidification of the product, without negative effect on the product.

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

## 8 Toxicity & safety

For Toxicity and Safety Data we refer to the Safety Data Sheet. The information and advice given should be observed and due attention should be given to the precautions necessary for handling chemicals. This

product should not be used to protect the inside of drinking water systems against freezing. The transport is not regulated.

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# Corrosion Inhibitor BSB

## Addendum - Technical information

### Chemical and physical properties

	<b>BSB</b>	method
Inhibitor content	42 % w/w	
Free Water*	58 % w/w	ASTM D1123
Nitrite, amine, phosphate, borate, silicate	Nil	
Colour	Uncoloured or Dark Blue	
Density, 20°C, kg/l	1.050 – 1.080	ASTM D5931
pH	9.8 typ.	ASTM D1287
	<b>6 % BSB in MEG <sup>1</sup></b>	method
pH (33 vol.%)	8.0 – 9.0	BS 5117:1.1
Reserve alkalinity (pH 5.5)	> 2.0	BS 5117:1.1
Foaming properties at 88°C ↳ break time	50 ml max 5 sec. max	BS 5117:1.4
Hard water stability	< 0.01 ml	BS 5117:1.5

\* Not including reaction water

<sup>1</sup> A coolant concentrate blended according to formulation 1

# Corrosion Inhibitor BSB

## BS 5117: 2.2 Hot immersion glassware corrosion test

	Weight loss in mg/coupon <sup>2</sup>					
	Brass	Copper	Solder	Steel	Cast Iron	Aluminium
ASTM D3306 (max)	10	10	30	10	10	30
BS 6580 : 1992 (max)	10	10	15	10	10	15
<b>6 % BSB in MEG<sup>2</sup></b>	0.7	0.2	2.5	-0.8	-0.5	1.2
<b>6 % BSB in MPG<sup>2</sup></b>	0.5	0.7	5.3	0.6	-0.6	1.4

<sup>2</sup> Weight loss AFTER chemical cleaning acc. to ASTM procedure. Weight gain is indicated by a - sign.

## BS 5117: 2.2 Aluminium heat transfer test

	Weight loss in mg/cm <sup>2</sup> /week
ASTM D3306 (max)	1.0
BS 6580 (max)	1.0
<b>6 % BSB in MEG<sup>3</sup></b>	-0.2
<b>6 % BSB in MPG<sup>3</sup></b>	-0.3

<sup>3</sup> A coolant concentrate blended according to formulation 1 resp. formulation 2