

Corrosion Inhibitor BS 6580

Corrosion Inhibitor BS 6580 is a nitrite-, amine-, silicate-, borate- and phosphate-free ethylene glycol based inhibitor concentrate.

When blended with ethylene glycol and water as described below, it will function both as antifreeze and engine coolant and impart excellent corrosion protection to all cooling system metals and alloys used in internal combustion engines.

Blending engine coolant concentrates from Corrosion Inhibitor BS 6580

Engine coolant concentrates that meet the requirements of **British Standard BS 6580:2010 and ASTM D 3306** can be blended by mixing the following liquids in the specified ratio at ambient temperature:

Corrosion Inhibitor BS 6580	6.0 %	by weight
Ethylene glycol, technical grade	94.0 %	by weight

The completion of the blending process can be controlled by checking samples from the bottom and the top of the tank or mixing reactor.

Ready-to-use coolant

When blending a ready-to-use coolant (i.e. an aqueous solution of above described engine coolant concentrate) the following recommendations apply:

For a ready-to-use coolant with good corrosion protection it is recommended to use at least 30 % by volume of engine coolant concentrate.

For a coolant with optimum corrosion protection a 50 % by volume solution is recommended.

For a coolant with maximum frost protection a 60 % by volume solution can be blended.

Aqueous solutions with concentrations higher than 60 % by volume are not recommended as heat transfer properties might be insufficient.

Chemical nature	Ethylene glycol with inhibitors		
Appearance	Clear liquid		
Colour	Slightly yellow to amber		
Physical data	Density at 20°C, g/cm ³	1.114 – 1.118	DIN 51 757-4
	pH	9.6 – 10.0	ASTM D 1287
	Reserve alkalinity of 2 g, ml	6.5 – 9.8	ASTM D 1121
	Water content, %	20.5 – 22.5	ASTM D 1123

A coolant concentrate blended from Corrosion Inhibitor BS 6580 and ethylene glycol according to the ratio given above in order to meet the requirements of British Standard BS 6580:2010 and ASTM D 3306 will have the following properties:

	Density at 20°C, g/cm ³	1.110 – 1.120	DIN 51 757-4
	pH, 33 vol % solution	7.7 – 8.5	ASTM D 1287
	Water content, %	3 max	ASTM D 1123
	Reserve alkalinity, ml	2.5 – 4.0	ASTM D 1121
	Boiling point, °C	150 min	ASTM D 1120
	Flash point, °C	110 min	DIN ISO 2592
	Hard water stability, ml	0.5 max	ASTM D 7437
	Foaming properties		ASTM D 1881
	Volume, ml	50 max	
	Break time, s	5 max	
	Freezing point		ASTM D 1177
	33 vol % solution, °C	-18 max	
	50 vol % solution, °C	-37 max	

Please note that an engine coolant concentrate according to BS 6580:2010 and ASTM D 3306 may contain up to 5 % of water.

Glassware corrosion test, ASTM D 1384 / Hot immersion test (BS 6580)

	Weight loss (after chemical cleaning) in mg/coupon					
	Copper	Solder	Brass	Steel	Cast iron	Aluminum alloy
Specification limit as in ASTM D 3306 and BS 6580:2010	10 max	30 max	10 max	10 max	10 max	30 max
Coolant made from Corrosion Inhibitor BS 6580 (typical data)	0.2	1.4	-0.1	0.2	0.1	2.0

Aluminum heat-transfer corrosion test, ASTM D 4340

	Corrosion rate in mg/cm ² /week
Specification limit as in ASTM D 3306 and BS 6580:2010	1.0 max
Coolant made from Corrosion Inhibitor BS 6580 (typical data)	-0.09 (weight gain)

Hard water stability

Engine coolant concentrates blended from **Corrosion Inhibitor BS 6580** are stable in solutions of hard water that contain up to 500 ppm calcium chloride.

Miscibility

Engine coolants made from **Corrosion Inhibitor BS 6580** are miscible with silicate-free and silicate-containing coolants.

Availability

Corrosion Inhibitor BS 6580 is available in bulk and in 230 kg drums.

Appearance

Corrosion Inhibitor BS 6580 is available only as uncolored product. Virtually all color shades can be matched by adding an appropriate colorant.

Bittering agent

Corrosion Inhibitor BS 6580 does not contain bittering agent. The blender may add bittering agent, e.g. denatonium benzoate, to fulfill national requirements like e.g. in France and in the UK.

Storage stability

Corrosion Inhibitor BS 6580 has a shelf life of at least three years when stored in originally closed, air-tight containers at temperatures of maximum 30°C. Do not use galvanized containers for storage, they may corrode.

Quality control

The above-listed data represent average values at the time of going to press of this Data Sheet. They are intended as a guide to facilitate handling and cannot be regarded as specified data. Specified product data are issued as a separate product specification.

Safety

When using this product, the information and advice given in our **Safety Data Sheet** should be observed. Due attention should also be given to the **precautions** necessary for handling chemicals.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights, etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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