



# **Freecor® BMC**

#### Si-OAT technology with phosphate

**Freecor® BMC** is Arteco's most versatile and multifunctional coolant for Internal Combustion Engines and Battery Electric Vehicles that provides unique hard water and oxidation stability.

As an ethylene glycol-based coolant, **Freecor® BMC** contains cutting-edge silicate inhibitor technology with phosphate supported by a robust organic backbone (OAT - Organic Additive Technology).

Freecor® BMC is a next generation Si-OAT technology coolant.

# **PRODUCT BENEFITS**



# **Reduced complexity**

- Replaces former Si-OAT generation coolants
- Replaces former hybrid Si-OAT generation coolants containing borate, molybdate and nitrate



# **Advanced features**

- Thermal oxidative stability
- Controlled Atmosphere Brazing (CAB) flux compatibility
- State-of-the-art silicate stabilisation
- Outstanding aluminium passivation
- Excellent hard water stability



#### **Environment and Health**

- · Reduced waste thanks to long drain intervals and less replacement of materials
- · Free from nitrites, borates, amines and 2-ethylhexanoic acid



#### Compatibility

- Compatible with widely and commonly used construction materials such as metals, alloys, rubbers and engineering (thermo)plastics
- Compatible with other coolants, such as former generations of Si-OAT (exclusive use of Freecor<sup>®</sup> BMC is recommended)







# Application

Arteco's Freecor® BMC can be used in a wide range of drivetrains. It is especially designed for use in modern Internal Combustion Engines (ICE), Hybrids and indirect cooling systems of Battery Electric Vehicles (BEV). Freecor® BMC provides year-round frost and corrosion protection. It is recommended to use at least 35 vol.% of the antifreeze in the final coolant solution. Concentrations higher than 70 vol.% are not recommended.

#### Key approvals, standards and specifications

Arteco is renowned for working in close collaboration with most Original Equipment Manufacturers (OEMs) to develop its coolants meeting their stringent requirements for first fill and service applications. This results in:

# **Toxicity & safety**

For toxicity information, safe handling and disposal of the product, we refer to the Safety Data Sheet. This product should not be used to protect the inside of drinking water systems.

Freecor<sup>®</sup> BMC meets the following standards:

- ASTM D3306 •
- JIS K2234:2018
- FVV R 530:2005
- BS 6580:2010\*
- Ö-Norm<sup>1\*</sup>
- GB 29743.1 (PC) 2014, 2022\*
- AFNOR NF-R-15-601

<sup>1</sup> except for RA \* modified

# Freecor<sup>®</sup> BMC is recommended for:

- BMW LC 87, LC 97, LC 18 •
- Alfa Romeo, Fiat, Lancia 9.55523 •
- Chrysler MS 7170 •
- Opel / Vauxhall GME L1301
- VW G12 EVO (TL 774-L)
- MAN 324NF, MAN 324 Si-OAT •
- MWM 0199-99-2091/12
- Iveco standard 18-1830
- Cummins 85T8-2
- DTFR 29C120 (former MB325.5)
- Deutz DQC CA-14
- Ford ESD-M97B49-A
- Volvo Cars 128 6083 / 002 & TR-31854114-002
- JI Case JIC-501
- MTU / Roll Royce MTL 5048
- Toyota 1WW/2WW Engines

For the complete overview and details, please consult Arteco's Product Finder.

# Packaging

Arteco's Freecor® BMC is available in the following packs & colours:







# Shelflife & storage requirements

**Freecor® BMC** can be stored for minimum 3 years in unopened containers without any effect on the product quality for performance. It is strongly recommended to use new, non-translucent containers and where possible packages with a UV-filter. Direct sunlight and high temperatures can degrade the quality of the product. The product should be stored above -20°C and and below 30°C. Periods of exposure to temperatures above 35°C should be minimised. **Freecor® BMC** is not compatible with galvanized steel.

# Compatibility and mixability

For optimal performance:

- Exclusive use of Freecor<sup>®</sup> BMC is recommended. Although Freecor<sup>®</sup> BMC is compatible with most other coolants based on ethylene glycol such as (former) Si-OAT coolant generations, for getting the full benefits of the product it should not be mixed with other products.
- The coolant as concentrate needs to be diluted before use in your installations/systems. Use at least 35vol% of
  Freecor® BMC in the coolant solution and follow the dilution recommendation of the manual for your equipment.
- Use of deionised or distilled water to prepare the ready-to-use dilutions for controlled quality is advised. We refer to our product information leaflet on water quality recommendations.

# Contact details

Should you have questions with regards to Arteco's **Freecor® BMC**, related to available packages or colours or on one of the other Arteco solutions, please do not hesitate to contact your local Area Sales Manager or send your inquiry to info@arteco-coolants.com.

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# **Addendum - Technical information**

Chemical and Physical Properties					
Property	Freecor <sup>®</sup> BMC	Unit	ASTM D3306 requirements	Method	
Ethylene glycol	91 min.	% w/w	base		
Other glycols	1 max.	% w/w	5% max.		
Inhibitor content	4.5 typ.	% w/w			
Water content	4 max.	% w/w	report	ASTM D1123	
Ash content	2	% w/w	5% max.	ASTM D1119	
Nitrite, amine, borate, 2EHA	-				
Relative density - specific gravity (15,6°C)	1.124		1.110 - 1.145	ASTM D5931	
Density (20°C)	1.120 typ.	kg/l		ASTM D1122	
Equilibrium boiling point	163 min.	°C	> 163	ASTM D1120	
Reserve Alkalinity to inflection point	26.3 min.			ASTM D1121	
рН (20°С)	8.5 typ.			ASTM D1287	
Refractive Index (20°C)	1.432 typ.			ASTM D1218	

# Physical data - typical values

	50% dilution	35% dilution	Method
рН	8.3	8.1	ASTM D1287
Initial crystalisation, °C	-36.4	-19.9	ASTM D1177
Density (20°C), kg/l	1.071	1.051	ASTM D1121
Refractive index	1.386	1.371	ASTM D1218
Equilibrium boiling point, °C	108	106	ASTM D1120

