

Freecor[®] ACC

N-OAT technology

Freecor[®] ACC is an ethylene glycol based Nitrited Organic Additive Technology (N-OAT) engine coolant. **Freecor[®] ACC** is used as a cooling and heat transfer fluid in on- and off-road heavy duty, stationary and natural gas engines.

Freecor[®] ACC is designed as next generation N-OAT coolant with improved cylinder liner protection and improved compatibility with CAB brazed Aluminium heat exchangers.



PRODUCT BENEFITS



Superior metal protection

- Provides superior multi-metal protection in engines manufactured from cast iron, aluminium or combinations of the two metals, and in cooling systems comprising aluminium or copper alloys.
- Smart flux compensation package eliminating the adverse effect of flux material, used during the production process of aluminium heat exchangers. This results in reduced consumption speed of the nitrite inhibitor and prolong the wet liner cavitation protection.
- Additional cylinder liner protection thanks to the presence of nitrite and molybdate.



Robustness

- More flexibility on engine design thanks to outstanding heat transfer
- Specifically designed for on- and off-road heavy duty, stationary and natural gas engines
- Outstanding pH stability at high temperatures
- Meeting industry standards targeting heavy duty and industrial applications.



Environment, health and safety

- Carefully selected additives to reduce environmental impact
- 2-EHA and borate free technology

Application

Arteco's **Freecor® ACC** can be used with confidence in engines comprised of cast iron, aluminium or combinations of the two metals, and in cooling systems comprising aluminium or copper alloys such as heavy duty, stationary and gas engines. **Freecor® ACC** is also suitable for use in marine engines and industrial applications.

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 (non-exhaustive list):

Freecor® ACC complies with following standards:

- ASTM D3306
- ASTM D6210
- CES 14439

Freecor® ACC is suitable for use in (non-exhaustive list):

- Caterpillar
- Cummins
- Deutz
- GE-Jenbacher
- Wärtsilä

For the complete overview and details, please consult [Arteco's Product Finder](#).

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.

Packaging

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



Bulk



Drum



IBC 1000L



Colourless

Contact details

Should you have questions with regards to Arteco's **Freecor® ACC**, related to available packages, 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@artecco-coolants.com.

Shelflife & storage requirements

Freecor® ACC can be stored for 60 months in unopened recipients without any effect on the product quality or 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. **Freecor® ACC** should be stored above -20°C and below 30°C. Periods of exposure to temperatures above 35°C should be minimised. **Freecor® ACC** is not compatible with galvanized steel.

Compatibility and mixability

For optimal performance:

- Exclusive use of **Freecor® ACC** is recommended. Although **Freecor® ACC** is compatible with most other coolants based on ethylene glycol, 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 33vol% of **Freecor® ACC** 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.

Freecor® ACC is compatible with widely and commonly used construction materials such as metals, alloys, rubbers and engineering (thermo)plastics. We refer to our leaflet on Coolant Compatibility with Elastomer and Thermoplastic & Thermosetting Polymers for a more extensive list.

Addendum - Technical information

Chemical and Physical Properties

Property	Freecor® ACC	Unit	ASTM D3306 requirements	Method
Ethylene glycol	91 min.	% w/w	base	
Other glycols	1 max.	% w/w	5% max.	
Inhibitor content	5.7 typ.	% w/w		
Water content	2.7 max.	% w/w	report	ASTM D1123
Ash content	1.3 max.	% w/w	5% max.	ASTM D1119
Amine, phosphate, borate, silicate, 2EHA	-			
Nitrite	1100 typ.	ppm		
Molybdenum	460 typ.	ppm		
Relative density (15,6°C)	1.127 typ.		1.110 - 1.145	ASTM D5931
Colour	coloured or uncoloured			
Equilibrium boiling point	177 min.	°C	> 163	ASTM D1120
Reserve Alkalinity (pH 5.5)	2.7 typ.	ml 0.1M HCl	report	ASTM D1121
pH (20°C)	8.6 typ.			ASTM D1287
Density (20°C)	1.124 typ.			ASTM D5931

Chemical and Physical Properties - Dilutions in water

	50 % dilution	Unit	ASTM D3306 requirements	Method
pH	8.3		7.5 to 11.0	ASTM D1287
Freezing point	-37	°C		ASTM D1177
Boiling point	110	°C		ASTM D1120
Density (20°C)	1.073			ASTM D5931
Kinematic viscosity (20°C)	4.0	mm ² /s		ASTM D445
Foaming properties	88 ml/3s (measured on 33v% dilution of concentrate in water)		150 ml max.	ASTM D1881

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