Freecor® XLC

OAT technology

Freecor® XLC is a full Organic Additive Technology (OAT) engine coolant that provides year-round frost and boil protection. Carefully chosen additives offer an outstanding performance in oxidation and hard water stability, as well as superior corrosion protection under harsh conditions.

Freecor® XLC is designed to seamlessly replace Havoline® XLC in applications, the coolant can be used in a professional environment as well as for consumer use.

PRODUCT BENEFITS

Superior corrosion protection

- Outstanding corrosion performance in both static corrosion as well as in dynamic heat transfer test
- Offers high temperature corrosion resistance of the aluminium heat transfer surfaces contained in modern engines

Robustness

- More flexibility on engine design thanks to outstanding heat transfer
- Suitable for mixed fleets, one coolant for both automotive and heavy duty applications
- Outstanding oxidation and pH stability at high temperatures

Long life performance

- Extended service interval thanks to the OAT backbone with virtually non-depleting organic corrosion inhibitors
- Minimal maintenance and adequate part protection

Environment, health and safety

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

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Application

Arteco's **Freecor® XLC** can be used with confidence in engines manufactured from cast iron, aluminium or combinations of the two metals, and in cooling systems comprising aluminium or copper alloys. Similar to Havoline® XLC, this coolant is particularly recommended where high temperature aluminium protection is important.
Freecor® XLC is suitable for use in combustion engines and Battery Electric Vehicles in automotive and heavy duty applications where there is no requirement on electrical conductivity.
Freecor® XLC can be used as a full replacement for Havoline® XLC applications and its respective performance level requirements, for both professional and consumer use.

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® XLC complies with following standards:

- ASTM D3306
- BS 6580:2010*

** modified*

Freecor® XLC is suitable for use in:

- Cummins
- DAF
- Daimler
- Deutz
- Ford
- Iveco
- MAN
- Mercedes
- Stellantis
- Volkswagen

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® XLC** is available in the following packs & colours:

Bulk

Drum

IBC 1000L

Colourless

Red

Blue

Orange

Yellow

Contact details

Should you have questions with regards to Arteco's **Freecor® XLC**, 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@arteco-coolants.com.

Shelflife & storage requirements

Freecor® XLC can be stored for 12 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® XLC** should be stored above -20°C and below 30°C. Periods of exposure to temperatures above 35°C should be minimised. **Freecor® XLC** is not compatible with galvanized steel.

Compatibility and mixability

For optimal performance:

- Exclusive use of **Freecor® XLC** is recommended. Although **Freecor® XLC** is compatible with most other coolants based on ethylene glycol - especially **Havoline® XLC,** 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® XLC** 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® XLC 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® XLC	Unit	ASTM D3306 requirements	Method
Ethylene glycol	91 min.	% w/w	base	
Other glycols	1 max.	% w/w	5% max.	
Inhibitor content	5 typ.	% w/w		
Water content	< 5	% w/w	report	ASTM D1123
Ash content	1.5 max.	% w/w	5% max.	ASTM D1119
Nitrite, nitrate, borate, 2EHA	-			
Relative density (15,6°C)	1.125 typ.		1.110 - 1.145	ASTM D5931
Colour	coloured or uncoloured			
Equilibrium boiling point	170 min.	°C	> 163	ASTM D1120
Reserve Alkalinity (pH 5.5)	6.3 typ.	ml 0.1M HCl	report	ASTM D1121
pH (20°C)	8.6 typ.			ASTM D1287

Chemical and Physical Properties - Dilutions in water

	40% dilution	50% dilution	Unit	Method
Freezing point	- 25	- 37	°C	ASTM D1177
Foaming properties	50 ml/ 3 s (measured on 33v% dilution of concentrate in water)			ASTM D1881
Boiling point	106	109	°C	ASTM D1120
Density (20°C)	1.058	1.072	kg/l	ASTM D1122
Kinematic viscosity (20°C)	2.9	3.9	mm²/s	ASTM D445
pH	8.7	8.7		ASTM D1287

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