

## 1. Description

**Valiantech XLC Antifreeze** – mixed with the appropriate amount of water is used as a cooling and heat transferring fluid in combustion engines. Excessive heat is transferred via the fluid to the radiator where the mixture is cooled by means of airflow. Valiantech Antifreeze is an ethylene glycol based fluid that provides maintenance-free protection against freezing and boiling but also against corrosion. Extended coolant life, often for the whole life of the engine or vehicle, is obtained through the use of virtually non-depleting corrosion inhibitors.

## 2. Benefits

**Valiantech XLC Antifreeze** offers many benefits to the engine designer as well as to the user:

- **Extended life** by synergistic combination
- **Improved heat transfer** leaves more flexibility to engine design
- **Reduces repairs** to thermostat, radiator and water pump
- **Reliability** depletion free and stable inhibitor
- **Improved hard water stability** absence of silicates and phosphates
- **Save time and money** maintenance-free coolant
- **Suitable for mixed fleets** 1 coolant for automotives & heavy duty application
- **Environmentally friendly** by using carboxylic additives

## XLC Antifreeze (Concentrate)



Based on patented silicate-free aliphatic additive technology, **Valiantech XLC Antifreeze** provides long-life corrosion protection for all engine metals, including aluminium and ferrous alloys. During extensive fleet testing, the synergistic combination of mono- and dicarboxylates present in this coolant, has proven to provide protection for at least 650,000 km (ca. 8,000 hours) in truck & bus application or 250,000 km (ca. 2,000 hours) for passenger cars or 32,000 hours (or 6 years) for stationary engines. It is recommended to change the coolant every five years or when above mileages or operating times are reached, whichever comes first. **Valiantech XLC Antifreeze** provides long-life protection against all forms of corrosion by the use of optimised and patented organic corrosion inhibitors. Excellent and lasting high temperature corrosion protection is provided for the aluminium heat transfer surfaces contained in modern engines. The inhibitor package of **Valiantech XLC Antifreeze** offers excellent cavitation protection even without using nitrite or nitrite-based supplemental coolant additives (SCA's).

### 3. Application

**Valiantech XLC Antifreeze** provides long-life frost and corrosion protection. To ensure good corrosion protection, it is recommended to use at least 33 vol.% of **Valiantech XLC Antifreeze** in the coolant solution. This provides frost protection to -20 °C. Typical mixtures in Northern Europe are 50/50, offering frost protection down to -40 °C. Mixtures with more than 70 vol.% **Valiantech XLC Antifreeze** in water are not recommended. The maximum frost protection (about -69 °C) is obtained at 68 vol.%. **Valiantech XLC Antifreeze** may be used with confidence in engines manufactured from cast iron, aluminium or combinations of the two metals, and in cooling systems made of aluminium or copper alloys. **Valiantech XLC Antifreeze** is particularly recommended for hi-tech engines, where high temperature aluminium protection is important. For racing cars, we recommend the usage of **Valiantech XLC Antifreeze**, an aqueous solution of the same carboxylic additives.

### 4. Compatibility & Mixability

**Valiantech XLC Antifreeze** is compatible with most other coolants based on ethylene glycol. Exclusive use of **Valiantech XLC Antifreeze** is however recommended for optimum corrosion protection and sludge control. For optimal performance and controlled quality, we recommend the use of deionised, distilled water or our **Valiantech RO Water** to prepare the ready-to-use dilutions although lab testing has shown that acceptable corrosion results are still obtained with water of 20°dH, containing up to 500 ppm chlorides or 500 ppm sulphates. We refer to our information leaflet on water quality recommendations. Contact your local Area Sales Manager for more information.

## XLC Antifreeze (Concentrate)



### Mixing Table

Frosting Protection	Water	Protection up to
1 part	2 parts	-20°C
1 part	1 part	-40°C

### 5. Approvals by OEMs

**Valiantech XLC Antifreeze** has been approved by many engine manufactures, both car and truck manufacturers. Some of these approvals are:

- Ford specification WSS-M97B44-D
- Mercedes-Benz specification 325.3
- General Motors specification GM 6277M
- MAN specification 324 type SNF
- Volkswagen specification TL 774F

A complete and up-to-date list with all approvals is available upon request. Contact your local Area Sales Manager for more information. Even though a formal approval has not been obtained from some OEMs, **Valiantech XLC Antifreeze** is suitable for use as antifreeze / coolant in any combustion engine. We refer to the OEM's manual for recommended coolant type.

### 6. Fleet tests

**Valiantech XLC Antifreeze** has been extensively fleet tested for over 100,000,000 km! 540 vehicles, both heavy duty and automotive, have been closely monitored and showed:

- Limited depletion rates of the corrosion inhibitors: less than 10 %
- Superior aluminium protection
- Average pump life increased by 50 %
- Excellent cavitation protection even without the addition of nitrite
- No compatibility problems with good quality traditional coolants
- No compatibility problems with seals, hoses and plastic components

### 7. Storage and requirements

The product should be stored above  $-20^{\circ}\text{C}$  and preferably at ambient temperatures. Periods of exposure to temperatures above  $35^{\circ}\text{C}$  should be minimised. Further, it is strongly advised not to expose the coolant in translucent packages to direct sunlight because this can degrade the colour dyes present in the coolant, and result in fading of the colour or discoloration over time. This reaction can be accelerated if coupled with high ambient temperatures. To avoid this issue, it is therefore advisable to store coolant filled in translucent packages indoors. **Valiantech XLC Antifreeze** can be stored for minimum 8 years in unopened containers without any effect on the product quality or performance. It is strongly recommended to use new containers and not recycled ones. As with any antifreeze coolant, the use of galvanised steel is not recommended for pipes or any other part of the storage/mixing installation.

## 8. Technical Information

Characteristics	Units	Range	Test Method	Results
Appearance	-	Report	Visual	Blue
Density @ 20Deg.C	g/mL	1.02 to 1.08	ASTM D 5931	1.11
pH 20Deg.C 50%	-	Report	ASTM D 1287	8.12
pH 20Deg.C 30%	-	Report	ASTM D 1287	8.32
Reserve Alkalinity	ml HCl	5.00-7.00	ASTM 1121	6.4
Hard Water Stability	ppm	<100	VW PV 1426	None

## Freezing Point

Characteristics	Units	Range	Test Method	Result
50% dilution (1 part water)	°C	< -34.0 Deg. C	ASTM1177	-40.0
33% dilution (2 parts water)	°C	<-14.5 <u>Deg.C</u>	ASTM1177	-20.0

## Boiling Point

Characteristics	Units	Range	Test Method	Result
50% dilution (1 part water)	°C	>108°C	ASTM1120	110
33% dilution (2 parts water)	°C	<-105°C	ASTM1120	106