# QUANTUM® Antifreeze Long Life Concentrate G12 Plus

## Description and Application

**QUANTUM® Antifreeze Long Life G12 Plus** is antifreeze concentrate based on ethylene glycol and an additive system developed with silicate-free organic (mono- and di-carboxylic) acids. The product is free from potentially harmful substances such as nitrites, amines and phosphates which makes it environmentally friendly.

It is used for year-round protection against freezing, overheating and corrosion of the engines of passenger cars, trucks, buses, off-road vehicles and stationary and marine engines and etc. It should be used only after a proper dilution with distilled or soft water before use.

Except for all conventional combustion engines it is also especially good for the high-tech ones, because it provides the so vitally crucial high temperature corrosion protection for the aluminium heat transfer surfaces there.

In order to provide good and durable corrosion protection it is recommended to use at least 33 %v/v of **QUANTUM® Antifreeze Long Life G12 Plus** in distilled water. Typical mixtures are 1:1, offering frost protection at ambient temperatures down to -40°C. Mixtures with more than 70 %v/v in water are not recommended.

The maximum frost protection (about -69°C) is obtained at 68 %v/v of **QUANTUM® Antifreeze Long Life G12 Plus** in water**.**

Allows extended drain intervals thanks to the special organic additives used in the formulation and their minimum depletion during service. The recommended drain intervals are as follows:

- Passenger cars - **250,000 km** or **2,000 hours**
- Heavy duty trucks, buses and other commercial vehicles - **650,000 km** or **8,000 hours**
- Stationary engines - **32,000 hours or 6 years**

## Specifications

| | |
|---|---|
| ASTM | D 3306/D 4340/D4985/D5345 |
| MB | 325.3 |
| MAN | 324 Type SNF |
| SAE J | 1034 |
| VW | TL774-F (G12+) |
| VOLVO | 1286083 |
| MTU MTL | 5048 |
| OPEL | GM 6277M |
| Ford | WSS-M97B44-D |
| Cummins | IS series, N14 |
| John Deere | JDM H5 |

The table below summarizes different dilutions of **QUANTUM® Antifreeze Long Life G12 Plus** in distilled water and the relevant "Freezing Protection" they will ensure:

| QUANTUM® Antifreeze Long Life G12 Plus,% v/v | Distilled or Soft Water, % v/v | Freezing Protection down to Temperature*, °C |
|---|---|---|
| 33 | 67 | - 17 |
| 40 | 60 | - 25 |
| 50 | 50 | - 40 |
| 60 | 40 | - 55 |
| 70 | 30 | - 70 |

*Note - This temperature is the average value of the Initial Crystallization Temperature value and the Pour Point value. The exact value of the Freezing Temperature is determined in a laboratory. Approximate values can be obtained by refraction meters and hydrometers, calibrated for ethylene glycol based

## Typical Characteristics

| Parameter | Test Method | Typical Value |
|---|---|---|
| Appearance | Visual | Clear fluid |
| Colour | visual | Pink-red, fluorescent |
| Relative Density at 15.5°C | ASTM D 1122 | 1.12 |
| Initial Boiling Point, °C | ASTM D 1120 | 163 |
| Initial crystallization point**, °C | ASTM D 1177 | minus 37 |
| pH** | ASTM D 1287 | 8.5 |
| Foaming properties**<br>- Foam Volume, ml<br>- Break Time, s | ASTM D 1881 | <br>20<br>0 |
| Alkalinity, $cm^3$ | ASTM D 1121 | 4.5 |
| Corrosion in Glassware***<br>- Weight Loss, mg/specimen<br>- Copper<br>- Solder<br>- Brass<br>- Steel<br>- Cast Iron<br>- Aluminium | ASTM D 1384 | <br><br>1.9<br>1.0<br>1.6<br>-0.5<br>-1.4<br>4.6 |

** measured on 50 %v/v of Antifreeze concentrate in distilled water *** measured on 33% v/v of Antifreeze concentrate in distilled water

Important note: typical data values do not constitute a specification but are an indication based on current production and can be affected by allowable production tolerances. The right to make modifications is reserved.

## Health, Safety and Handling

This product is classified as dangerous and requires special labeling. The use of this product should be in accordance with the guidelines for safe handling in the safety data sheet

For more information about product MSDS, terms and conditions for storage and shelf life please visit: **www.quantum-oils.com**