

POLARGEL G12++

LILAC COLORED UNIVERSAL "LONG LIFE" ANTI-FREEZE
FOR COOLING CIRCUITS OF VEHICLES

700016/02.24
Rev. 1

DESCRIPTION

POLARGEL G12 ++ is an antifreeze concentrate based on monoethylene glycol (MEG) that uses the latest antifreeze technology. In this way the benefits of both organic technology and traditional mineral (silicate) technology are combined. Polargel G12 ++ is suitable for use in both gasoline and diesel engines and meets the requirements of OEMs that support this combination of organic and silicate technology. It is recommended to change the coolant every 5 years.

Carefully chosen additives provide the following properties in aqueous mixtures:

1. Increased life time, allowing less frequent maintenance, thanks to the corrosion inhibitors which have a very low depletion rate.
2. Thermal characteristics that permit effective engine cooling without boiling.
3. Elimination of abrasives solids, which gives a better protection of the joints of the water pump.
4. Superior short & long-term corrosion protection through combined use of organic acid and highly stabilized silicate additives, especially for aluminum engines.
5. Environmentally friendly as free from borates, phosphates, nitrites & amines.
6. Protection against frost, depending on the concentration chosen.
7. Excellent antifoaming characteristics.
8. Meets most European and International Standards.

USE AND DILUTION

Polargel G12 ++ is not used purely, but always **diluted with water**. The table below shows the freezing temperature as a function of the applied concentration:

| Polargel G12++ volume % in water | Freezing point NFT 78102 |
|-------------------------------------|-----------------------------|
| 25% | < -11 °C |
| 33% | < -20 °C |
| 50% | < -40 °C |
| 67% | < -70 °C |
| 100% | -13 °C |

POLARGEL G12++

PERFORMANCE

Polargel G12 ++ exceeds most European and international quality standards:

| | |
|------------------------------|--------------------|
| AFNOR NF R15-601 (Frankrijk) | BS 6580: 2010 (VK) |
| AS 2108 (Australië) | CUNA NC 956-16 |
| ASTM D3306 (VS) | FVV Heft R443 |
| ASTM D4656 (VS) | SAE J 1034 |
| ASTM D4985 (VS) | UNE 26361-8 |

Polargel G12 ++ is suitable for the following applications:

| OEM | OEM Standard |
|-----------------|---------------------|
| Audi | TL 774 J |
| Bentley | TL 774 J |
| Bugatti | TL 774 J |
| Cummins | CES 14603 |
| DEUTZ | DQC CC-14 |
| Irizar | |
| Lamborghini | TL 774 J |
| Liebherr Mining | LH-01-COL3A |
| MAN | 324 Typ Si-OAT |
| Mercedes Benz | MB 325.5 / MB 325.6 |
| Seat | TL 774 J |
| Porsche | |
| Scania | |
| Skoda | TL 774 J |
| Volkswagen VAG | TL774 J |
| | |

POLARGEL G12++ is an extended life antifreeze which should be replaced every five years or every 250,000 km for passenger vehicles or every 1,000,000 km for trucks and commercial vehicles. Original Equipment Manufacturers' (OEMs) recommendations should be followed when changing out cooling systems.

POLARGEL G12++ is formulated to be able to cope with all water qualities and is compatible with hard water, however use of deionized or demineralized water is recommended. POLARGEL G12++ is readily miscible with all engine coolants, however we advise not to mix organic additive-based products with traditional mineral containing coolants since optimum performance & longevity of service can only be guaranteed by using POLARGEL G12++ exclusively.

POLARGEL G12++

In order to provide a satisfactory level of corrosion protection it is recommended to use at least 33% (1:2) volume of C2153 in the coolant solution. In line with most car manufacturers UNIL Lubricants recommends a 50% (1:1) volume solution for optimum performance. For cold climates use 67% (2:1) volume, concentrations above 67% volume are not recommended and give no advantage.

Protection from corrosion is the most important function of a coolant concentrate and is achieved by the inclusion of a well-balanced inhibitor package. In modern engines with the greater use of aluminum alloys and thinner section castings, avoidance of corrosion problems is critical.

The inhibitor package of Polargel 12++ is the result of very extensive testing which includes laboratory tests, simulated service tests, static engine test and field service trials. It indeed also successfully passes the FVV Heft R443 / 1986 test.

Polargel 12++ provides extra protection of the alloys used in the cooling system of modern vehicles especially high-performance engines operating at higher temperatures than older vehicles. The tables below demonstrate the effective corrosion protection provided when tested against the industry standards such as ASTM D1384 (multi-metal corrosion in glassware) and ASTM D4340 (corrosion of cast aluminum alloys under heat-rejecting conditions).

STORAGE AND HANDLING

Polargel 12++ has a shelf life of at minimum four years when stored in air-tight containers at a maximum temperature of 30°C. Translucent containers should not be stored outside in direct sunlight, especially in warm climates. Polargel 12++ can be stored in mild steel, lacquer lined or HDPE containers. As with any glycol-based engine coolant the use of galvanized steel is not recommended for pipes or any other part of the storage/mixing installation.

Disposal of used or unused coolant must be carried out in accordance with local and national law, consult the material safety data sheet for further information.

As with all chemical products, awareness and control of any potential hazards is of high importance. Please consult the material safety data sheet which is available detailing the hazards associated with this product.