

REFRIGEL G12++ CONCENTRATED

High performance coolant concentrate based on monoethylene glycol. Free of 2-EHA, nitrites, amines, borates, and phosphates with Si-OAT technology. Suitable for hybrid and electric vehicles of different manufacturers.

Description

REFRIGEL G12++ CONCENTRATED is an antifreeze coolant concentrate based on monoethylene glycol and is used for engines in Heavy Duty vehicles, passenger cars and stationary engines. REFRIGEL G12++ CONCENTRATED is excellent for use for indirect cooling of hybrid and Battery Electric Vehicles (BEVs) in automotive and heavy-duty applications if there is no requirement on electrical conductivity. As Si-OAT coolant concentrate, it combines organic inhibitors, which provide long change intervals, with fast-reacting silicates. REFRIGEL G12++ CONCENTRATED is free of 2-EHA, nitrites, amines, borates, and phosphates.

Water hardness: 0 - 20 °dH (0-3.6 mmol/l)

Chloride content: 100 ppm max.

Sulphate content: 100 ppm max.

By adding distilled or deionized water these values can be easily adjusted, if necessary. Manufacturers' drain intervals and recommendations about the concentration are mandatory. As with all coolants, even with REFRIGEL G12++ CONCENTRATED, the use of galvanized components in cooling circuits and as a part of storage or mixing installation (e.g. for pipes) should be avoided.

For information on product safety and proper disposal please refer to the latest Material Safety Data Sheet.

Application

REFRIGEL G12++ CONCENTRATED was originally developed for conventional applications but additionally fulfills the requirements in selected hybrid and E-applications according to the manufacturers specifications. REFRIGEL G12++ CONCENTRATED is miscible with coolants VW TL 774-C (G11), TL 774-F (G12+), 774-G (G12++) and 774-J (G13), however, to achieve a full performance a complete change is recommended. REFRIGEL G12++ CONCENTRATED is a coolant concentrate and must be diluted with water before it is filled into the cooling system. The concentration rate should be between 33% to 60% by volume, typically 50%. The properties of the water should not exceed the following limits:

Advantages

- Prevents cavitation and provides excellent corrosion resistance and protection against deposits.
- Suitable for extended drain intervals.
- Good protection against freezing and overheating.
- Compatible with seals, plastics and non-ferrous metals.
- Contains bittering agent to prevent swallowing.
- Suitable for hybrid applications.

Product Information



Specifications

- AFNOR NF R 15-601 TYPE 1
- AS/NZS 2108:2004 TYPE A
- ASTM D 3306 TYPE I
- ASTM D 4985
- BS 6580:2010
- GB 29743-2013
- CUNA NC 956-16
- JIS K 2234:2006
- SAE J814
- SAE J1034
- SANS 1251:2005
- UNE 26-361-88/1

Recommendations

- ASTM D 6210 TYPE I
- CUMMINS CES 14603
- DETROIT DIESEL 93K217
- DEUTZ DQC CC-14
- DTFR 29C120
- IVECO 18-1830
- LIEBHERR LH-01-COL3A
- MAN 324 TYPE Si-OAT
- MB 325.5
- MB 325.6
- MTU MTL 5048
- PN-C 40007:2000
- SCANIA TB 1451
- VOITH Type Si-OAT
- VW TL 774-G (G12++)
- VW TL 774-J (G13)

Product Information



TYPICAL CHARACTERISTICS

Density at 20°C	DIN 51757	1.124 g/mL
Boiling Point	ASTM D 1120	> 160 °C
pH-value	DIN 51369	8.4
Product Dyeing	DIN 10964	pink-violet
Mixing Ratio REFRIGEL G12++ CONCENTRATED : H ₂ O		Frost Protection min. :
	1:1 (50%)	-40 °C / -40 °F
	2:3 (40%)	-27 °C / -16.6 °F
	1:2 (33%)	-20 °C / -4 °F

Product Information



In all cases, to limit the risk of water contamination (including condensation), store drums and barrels horizontally. Do not expose packaging to strong sunlight or extreme temperatures. The information contained in this data sheet is based on FLF's experience and know-how in the development and manufacture of lubricants and other chemical products to the best of our knowledge. All chemical products must be used in the intended application and in accordance with the recommendations provided in the Material Safety Data Sheet (MSDS). The performance of our products can be influenced by a range of factors, including conditions of use, application methods, operating environment, pre-treatment of components, possible external contamination, etc. For these reasons, a universal recommendation of our products is impossible. The information given in the data sheet represents general, non-binding guidelines and is provided for guidance only. No warranty, express or implied, is given concerning the properties of the product or its suitability for a given application. We therefore recommend consulting an application engineer to discuss application conditions and product performance criteria prior to use. It is the user's responsibility to test the functional suitability of the product and to use it under the appropriate safety conditions. Our products are subject to continuous improvement, with the aim of enhancing performance or bringing them into line with any new regulations. We reserve the right to modify our product ranges, our products and their manufacturing processes, as well as all the provisions of our publications, at any time and without prior notice. This data sheet cancels and replaces all previous editions. We expressly draw the attention of all users to the fact that our product has not been designed and tested for use in the nuclear and aeronautical fields ("embedded" product). Any use of our product in the aforementioned sectors is the sole responsibility of the user. Reproduction in any form requires the prior written consent of FLF, all rights reserved.