



Carpemar

Blue Sun® NCC

NON TOXIC – BIODEGRADABLE – LOW ELECTRICAL CONDUCTIVITY COOLANT – ANTIFREEZE

Description y applications:

Blue Sun® NCC for systems where a very low electrical conductivity is mandatory. At the same time it provides superior thermal transfer properties compared with oil based alternatives.

It is a safe, non-toxic and biodegradable product as it is base on Propylene Glycol.

Electrical Conductivity bellow 50 μ S/cm in temperature range 0 a 60°C.

The product is presented as ready to use, do not dilute or mixture with other antifreeze.

Mixtures with water or other kind of antifreeze should be avoided for possible incompatibilities which would reduce the performance of the product. For specific compatibilities you can contact our technical department: please email carpemar@carpemar.com.

It does not contain Nitrite or Amine as these are products that may react to give nitrosamines which are potential carcinogen agents. It does not contain phosphates either as their environmental implications have been questioned. No heavy metals, borates, nitrates, sulfates or other hazard products are contained in *Blue Sun® NCC*.

Temperatures of use

The product is stable in the temperature range of -20°C to 100°C.

Attributes:

- Prevents circuit from freezing.
- Raises boiling point, reducing overheating problems.
- Biodegradable.
- Non toxic

Technical Data:

Appearance	Transparent Colorless Liquid
Freezing Point	-20 °C
Density (50°C)	1,016-1,020 Kg/l
Specific Heat Capacity (50°C)	3,80 KJ/KgK
Dynamic Viscosity (50°C)	1,52 mPa s
Thermal Conductivity (50°C)	0,44 W/mK

Data have been gathered in specific bibliography and own tests. It is not part, necessarily, of the technical specifications.

Compatibility table:

Blue Sun[®] NCC is compatible with the usual materials of cooling circuits. The next table shows plastics, sealants and elastomers compatible with the product. Data has been gathered in specific bibliography and own tests.

Name	Abbreviation
Butyl rubber	IIR
Cloropropene	CR
Ethylene-propylene-diene rubber	EPDM
Fluorocarbon elastomers	FPM
Natural rubber up to 80°C	NR
Nitrile Rubber	NBR
Polyacetal	POM
Polyamide up to 115°C	PA
Polybutene	PB
Polyethylene high/low density	PE-LD/PE-HD
Polyethylene cross linked	VPE
Polypropylene	PP
Poly (tetrafluoroethylene)	PTFE
Polyvinyl chloride, rigid	PVC h
Silicone Rubber	Si
Styrene-butadiene rubber up to 100°C	SBR
Unsaturated polyester resins	UP

Phenolic resins, plasticized PVC and polyurethane elastomers are not compatible with *Blue Sun*[®] NCC.

Zinc is not compatible with propylene glycol or their mixtures with water, avoid zinc or galvanized containers.



Filling the installation:

Before filling the circuit it is recommended to rinse it with distilled water to eliminate possible particles deposited inside it and the excess fluxes of the solders.

Blue Sun® NCC is ready to use. fill the installation circuit with this product. In case of fluid losses they must be replaced only with *Blue Sun® NCC*.

Mixtures with other types of antifreeze or thermal fluids should be avoided since the properties of the product would not be guaranteed.

This product is totally stable and is preserved without alterations for two years in its original container tightly closed and without being exposed to sunlight.

In case of transfer to other types of containers make sure they do not contain zinc since it is not compatible with the product. Always store in airtight containers.

Precautions:

Blue Sun® NCC is a non flammable, non corrosive product, so no special precautions are required. In any case good industrial practices are recommendable. *Blue Sun® NCC* is stable for at least two years in regular stocks conditions in airtight containers.

Avoid contact with eyes, in case of splashing flush with running water for at least 10 minutes. Do not eat or drink, keep away of children. Store in a clean and well-ventilated place. Tightly sealed containers are recommended in order to maintain the properties of the product.

Carpemar

Temperature	Density	Specific Heat Capacity	Thermal Conductivity	Dynamic Viscosity	Cinematic Viscosity	Prandtl Number	Cubical Expansion Coefficient
°C	ρ (Kg/m ³)	Cp (KJ/KgK)	λ (W/mK)	μ (mPas)	ν (mm ² /s)		β (*10 ⁻⁵ 1/K)
-20	1053	3,67	0,409	40,65	38,61	365,54	23,83
-10	1050	3,69	0,413	20,35	19,38	182,69	36,68
0	1046	3,71	0,417	11,19	10,70	100,32	46,66
10	1041	3,73	0,421	6,67	6,41	59,67	54,53
20	1036	3,75	0,425	4,26	4,11	37,99	60,65
30	1031	3,77	0,429	2,88	2,79	25,63	65,41
40	1024	3,78	0,432	2,05	2,00	18,18	69,04
50	1018	3,80	0,436	1,52	1,49	13,46	71,76
60	1011	3,82	0,439	1,17	1,16	10,34	73,81
70	1004	3,84	0,442	0,93	0,93	8,21	75,27
80	996	3,85	0,445	0,76	0,77	6,71	76,31
90	989	3,87	0,448	0,64	0,65	5,61	76,96
100	981	3,89	0,451	0,55	0,56	4,80	77,30

Data have been gathered in specific bibliography and own tests. It is not part, necessarily, of the technical specifications.