SUC. DE CARMELO PEREZ MARTINEZ S.L.
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LUZAR ORGANIC -40ºC

TECHNICAL DOCUMENTATION

Coolant – Antifreeze with **100% organic antirust additives**: It maintains cooling circuits in perfect condition for longer periods of time than conventional products.

- ✓ 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 Borates or Benzoates.
- ✓ Without silicates, avoid gelling problems after a long time shutdown.
- ✓ It does not contain phosphates either as their environmental implications have been questioned.
- ✓ Its fluorescent yellow colour helps to detect leaks.
- ✓ It protects from corrosion: aluminium, cooper, brass, steel and cast iron.

Properties:

Appearance	Transparent Liquid
Color	Fluorescent Yellow
Protection Temperature[1]	-40ºC
Monoethylene glycol	50%
Boiling Point (1 bar)	109ºC
Boiling Point (2 bars)	137ºC
pH (20ºC)	8,5-9,5
Flash point	>100ºC
Density (20ºC)	1,07-1,08 g/cc
Viscosity (20ºC)	4,17 mPas
Specific Heat Capacity (20ºC)	3,32 KJ/KgK
Cubical Expansion Coefficient	0,00048 1/K
Alkaline Reserve	min. 5ml HCl 0,1N

[1]*Between both freezing and burst temperature exists a mixture of ice crystals and not-frozen fluid that flows without volume increase, thus, without bursting problems.*

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Corrosion Protection:

Mixtures of ethylene glycol and water are more corrosive than pure water so additives should be used in order to ensure the integrity of the circuit.

The following table shows the effectiveness of Luzar Organic -40ºC in inhibiting corrosion according to ASTM D 1384. For a comparative porpoise results for water and ethylene glycol without additives are presented.

Corrosion Comparative for different Metals and Coolants (mg/coupon)				
Metal	*Luzar Orgánic -40ºC*	**Monoethylene glycol - Water 33% volume**	**Water**	**ASTM D 3306 Lim. Max.**
Copper	0,07	4	2	10
Solder	0,41	1780	99	30
Brass	-0,68	11	5	10
Steel	-1,34	974	212	10
Cast Iron	-3,65	1190	450	10
Aluminium	8,90	165	110	30

The results above are an average change in weight of coupons in mg. A negative number indicates an increase in weight due to the formation of a stable protective layer on the metal's surface. Last column presents the maximum admitted values according to the ASTM-D 3306 normative.

Test description:

ASTM D 1384:

In this test method, specimens of metals typical of those present in engine cooling systems are totally immersed in aerated engine coolant solutions with corrosive water for 336 h at 88°C (190°F). The corrosion inhibitive properties of the test solution are evaluated on the basis of the weight changes incurred by the specimens. Each test is run in triplicate, and the average weight change is determined for each metal.

Specifications:

ASTM D-4985-94
ASTM D-3306-94
ASTM D-1177-65
INTA 157413
BS 6580
FS O-A 548 D
VW TL-774 D
UNE 26-361-88
SAE J 1034
MAN 324 SNF
VOLVO 12 86 083
SCANIA TI 02-980813 T/B/M
MB 325.0

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Compatibility table:

Luzar Organic -40ºC is compatible with the usual materials of thermal circuits. The next table shows plastics, sealants and elastomers compatible with the product. Data has been gathered in specific bibliography and proprietary tests.

Name	Abbreviation
Butyl rubber	IIR
Cloropropene	CR
Ethylene-propylene-diene rubber	EPDM
Fluorocarbon elastomers	FPM
Natural rubber up to 80ºC	NR
Nitrile Rubber	NBR
Polyacetal	POM
Polyamide up to 115ºC	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 100ºC	SBR
Unsaturated polyester resins	UP

Phenolic resins, plasticized PVC and polyurethane elastomers are not compatible with water mixtures of *Luzar Organic -40ºC*.

Zinc is not compatible with ethylene glycol or their mixtures with water, avoid zinc or galvanized reservoirs.

Filling the installation:

After draining the circuit of old antifreeze or before filling the installation for first time, it should be flushed with water in order to clean possible deposits and particles.

The product is presented ready to use. Do not dilute because its properties would not be guaranteed.

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The minor surface tension of *Luzar Organic -40ºC* compared with water may make minor damage due to previous corrosion more apparent.

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

Zinc is not compatible with ethylene glycol or their mixtures with water, avoid zinc or galvanized reservoirs.

Precautions:

Luzar Organic -40ºC is a non flammable, non corrosive product. As based in monoethylene glycol, the product is toxic if swallowed: Do not eat or drink and keep away of children.

Good industrial practices working with chemical products are recommendable in every case. Wash hands and forearms before eating, drinking or smoking after using the product.

Avoid contact with eyes, in case of splashing flush with running water for at least 10 minutes.

Store in a clean and well-ventilated place. Tightly sealed containers are recommended in order to maintain the properties of the product.

Presentation:

The product is supplied in 1.000 liters IBC containers, 210 liters non-returnable plastic drums, and in 25 and 10 liters non-returnable plastics drums.

Other volumes are available upon request.

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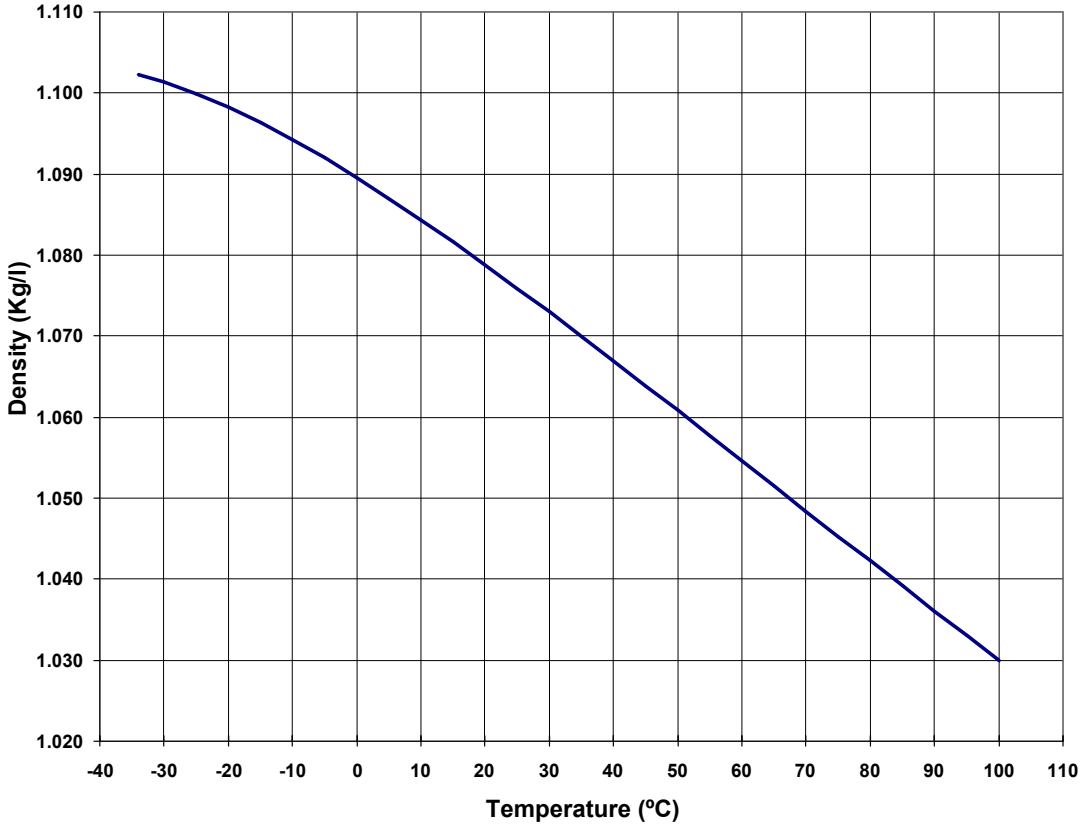
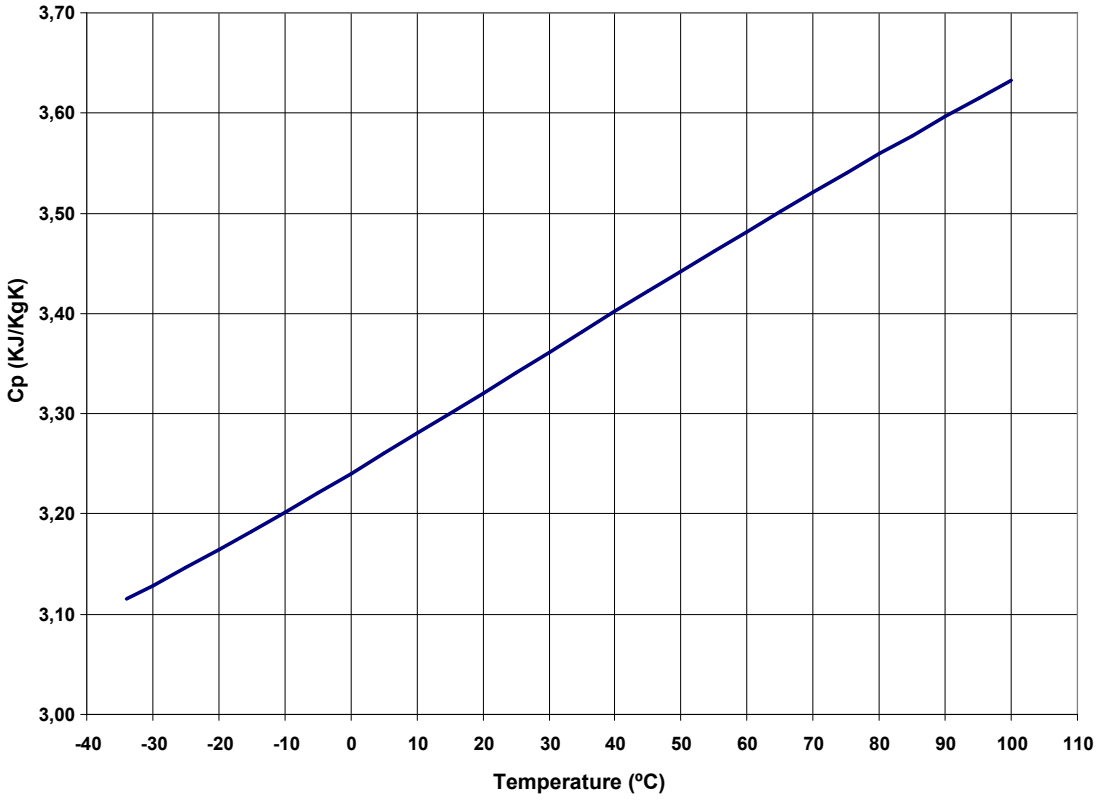
Density



Specific Heat Capacity



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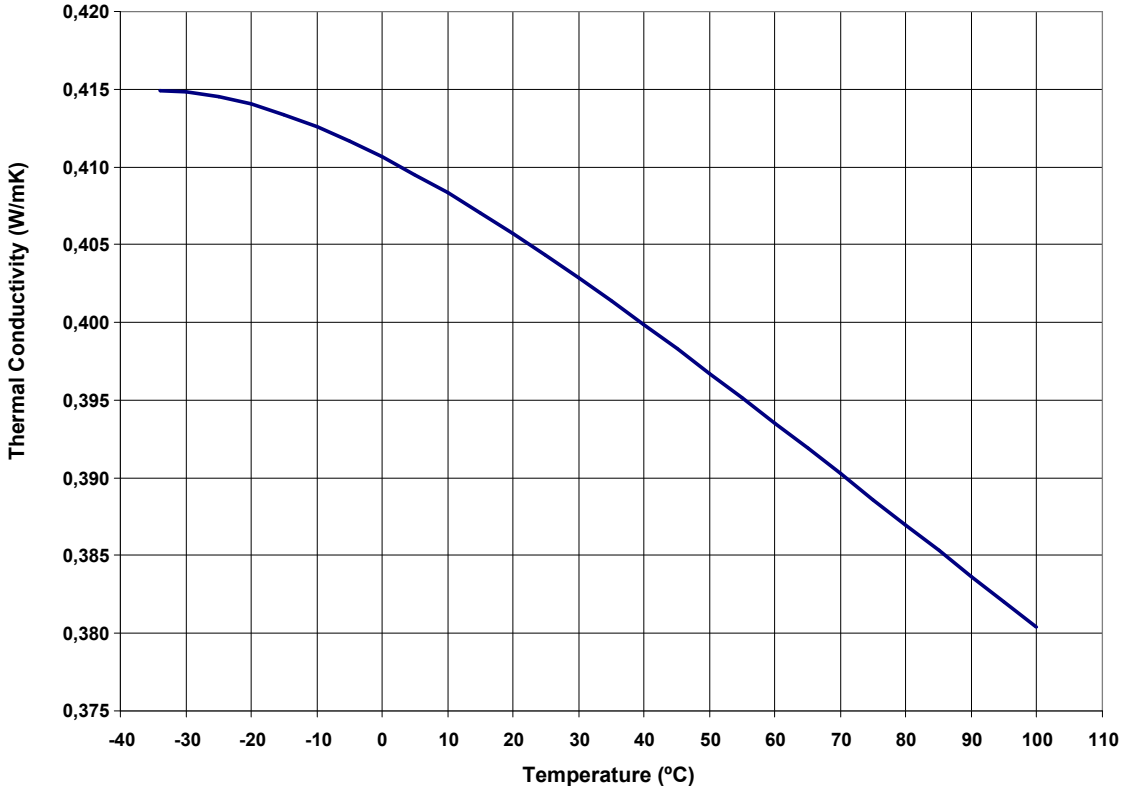
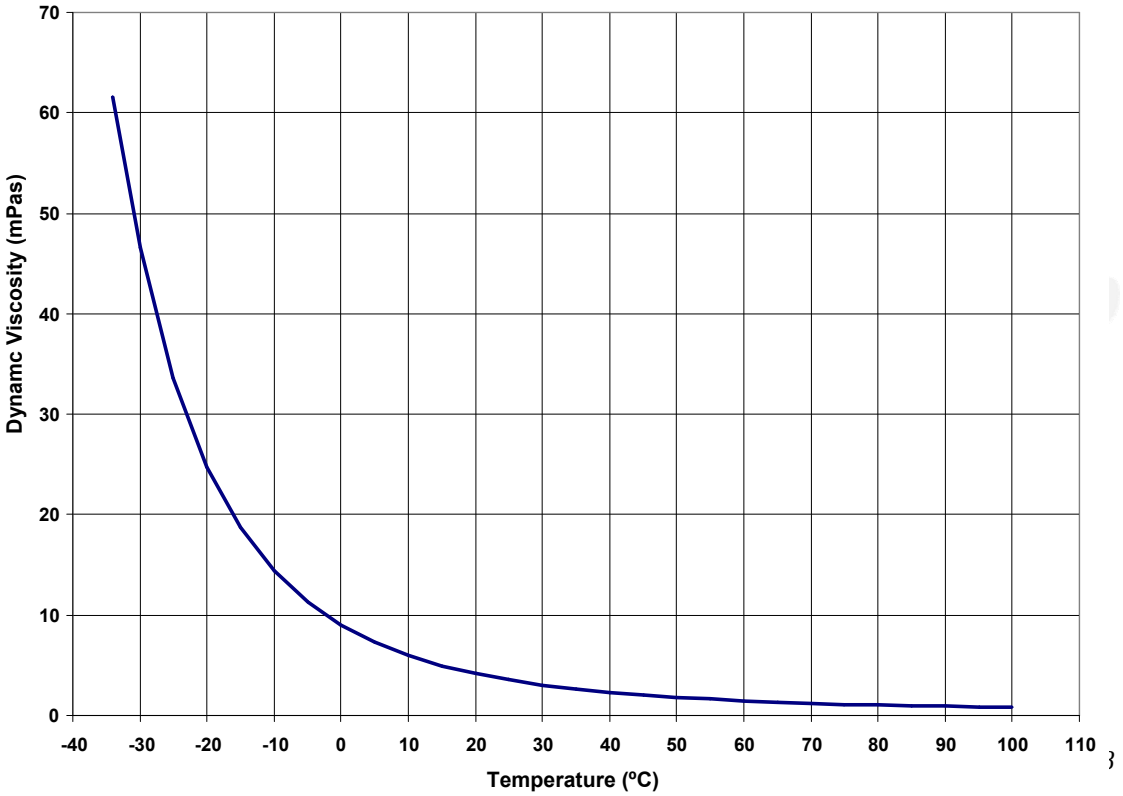
Thermal Conductivity



Dynamic Viscosity



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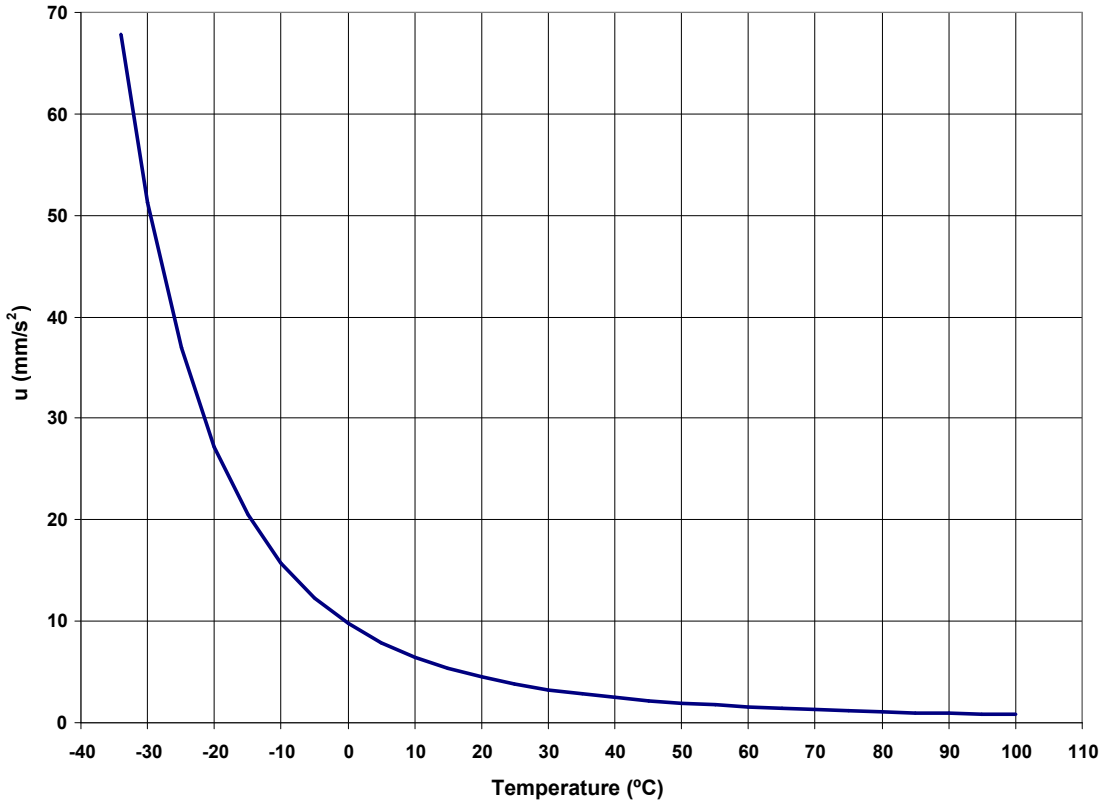
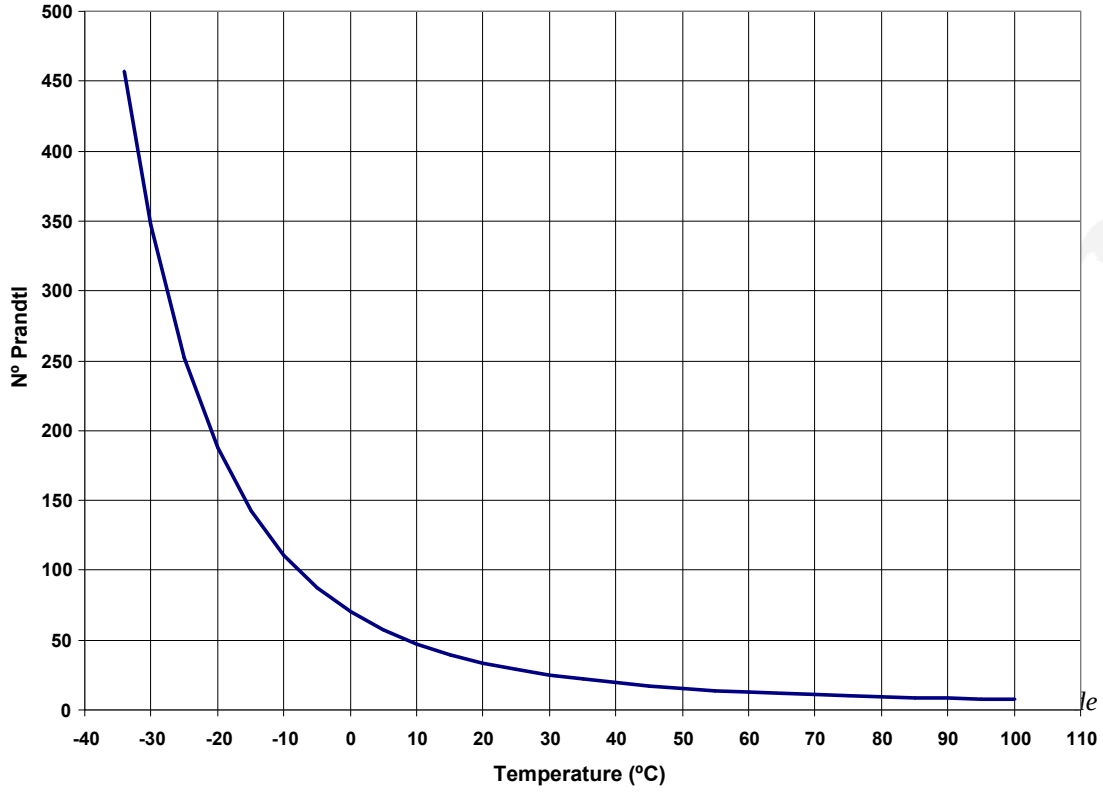
Kinematic Viscosity



Nº Prandtl



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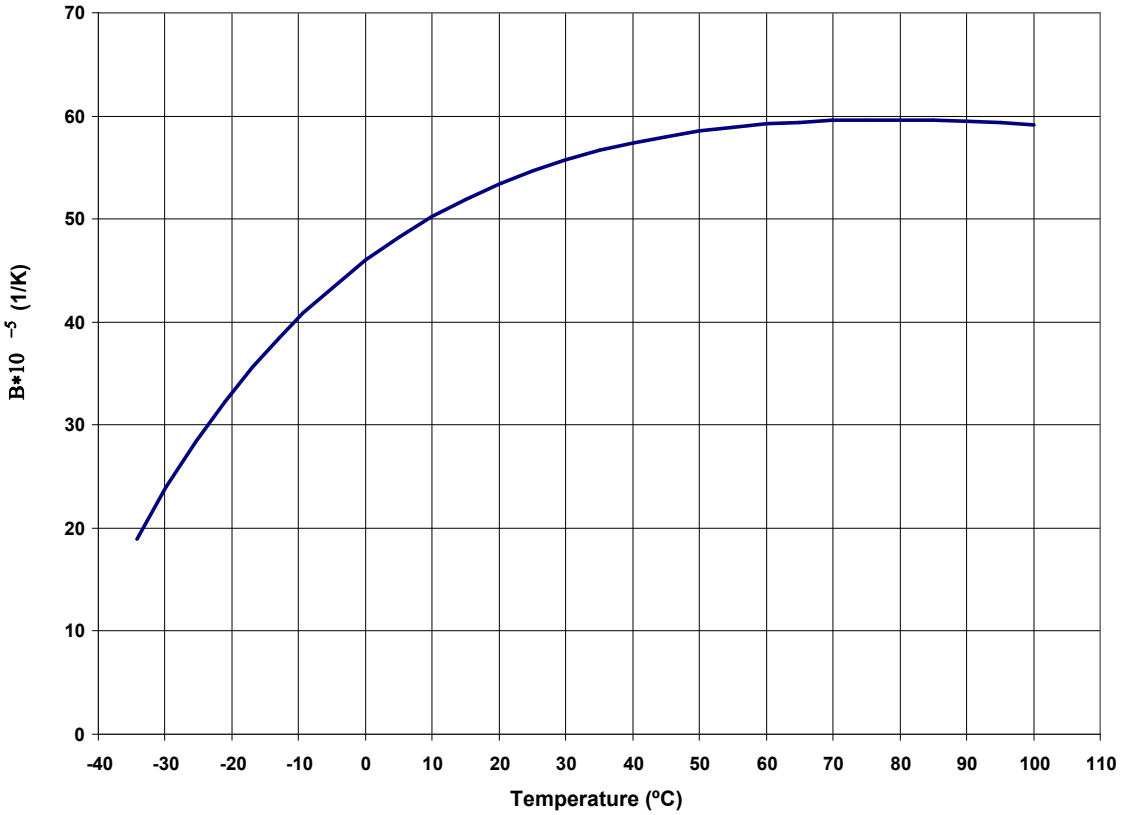
Thermal Expansion Coefficient



The information contained in this document is based on our current knowledge and experience. This information is presented for good use of the products and it is not part, necessarily, of the technical specifications.

It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.