

Perlast® ICE G90LT

Low temperature, ED resistant, perfluoroelastomer



Description

Perlast® ICE G90LT offers a unique combination of excellent chemical resistance, explosive decompression resistance and low temperature capability down to -46°C (-51°F).

Perlast® ICE G90LT has been formulated to provide excellent resistance to a broad range of chemicals by carefully controlling the molecular architecture. In addition, this perfluoroelastomer has a low permeability and as a result, it is less prone to swelling, leading to extended in-service performance in valves, pumps and mechanical seals.

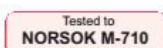
Ideal for use in exploration and completion applications and equipment operating or stored in sub-zero conditions. Perlast® ICE G90LT is suitable for both dynamic and static applications and can be full moulded in to O-rings (and size up to 2.5m/8ft internal diameter) and custom shapes.

Key Attributes

- Excellent explosive decompression resistance
- Tested to **NORSOK M710** standard
- Exceptional resistance to methanol, sour gas, hot water, steam, oils, acids and amines beyond that of conventional TFE/P (Aflas®) and FKM polymers
- Excellent low-temperature sealing capability
- Suitable for use in **API 6A & 6D** wellhead equipment and valves
- Good mechanical properties
- Good high temperature resistance

Other materials in this range

- Perlast® ICS G75LT (low temperature FFKM 75 IRHD grade)
- Perlast® G75TX (high temperature FFKM grade)
- Perlast® G92E (ED resistant FFKM grade)
- V71C (low temperature FKM)



Typical Applications

- Drilling Tools (deepwater)
- Wellhead equipment
- Completion tools
- Pipe connectors
- Downstream refinery & petrochem equipment
- Pumps
- Valves
- Compressors
- Mechanical seals

Property	ASTM	ISO	Value
Material Type	FFKM	FFPM	
Colour			Black
Hardness: (°IRHD) (Shore A)	D1415 D2240	ISO48 ISO7619	90 89
Tensile Strength(MPa)	D412	ISO37	18.0
Elongation at break (%)	D412	ISO37	115
100% Modulus (MPa)	D412	ISO37	17
Compression Set (%): 70 hrs @ 200°C (392°F)	D395	ISO815	21
Glass Transition (Tg) (TR10)	D3418 D1329		-30°C (-22°F) -31°C (-24°F)
Minimum Operating Temperature			-46°C (-51°F)
Maximum Operating Temperature			+240°C (+464°F)
Coefficient of Thermal Expansion (°C ⁻¹)			3.0x10 ⁻⁴

Special Note: This information is the best of our knowledge accurate and reliable. However, Abbey Seals International Ltd makes no warranty, expressed or implied, that parts manufactured from this material will perform satisfactorily in the customer's application. It is the customer's responsibility to evaluate parts prior to use, especially in applications where their failure may result in injury and/or damage. It should also be noted that all elastomeric parts have a finite life. Therefore a regular programme of inspection and replacement is strongly recommended. The material properties above should not be used for specification purposes.

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TEST INFORMATION

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Comparative Immersion Testing (% volume swell)

PERLAST® ICE

Chemical Media	Test Conditions	FFKM G90LT
Ammonia 28%	336 hrs @ 100°C (212°F)	+7%
Ethylene Acetate	168 hrs @ 23°C (73°F)	+5%
Ethylene Diamene	72 hrs @ 100°C (212°F)	+12%
FUel B	72 hrs @ 23°C (73°F)	+6%
Hexamethylene Diamene	168 hrs @ 150°C (302°F)	+17%
HNO ₃	72 hrs @ 80°C (176°F)	+5.5%
Sulphuric Acid 98% (H ₂ SO ₄)	168 hrs @ 65°C (149°F)	+4.5%
KOH Formate Brine	336 hrs @ 150°C (302°F)	+1%
Methanol	168 hrs @ 23°C (73°F)	+1%
Water (Steam)	168 hrs @ 220°C (428°F)	+1%

Up to 10% volume swell = Excellent

10% to 15% volume swell = Good

15% to 20% volume swell = Doubtful

More than 20% or more than -5% volume loss = Do not use