

# Perlast® ICE G75LT

## Low temperature perfluoroelastomer

**PERLAST® ICE**

### Description

Perlast® ICE G75LT offers a unique combination of excellent chemical resistance and low temperature performance. This perfluoroelastomer material has been specifically developed to perform under extreme conditions, in temperatures as low as -40°C (-40°F) or lower.

Perlast® ICE G75LT has been formulated to provide increased resistance to a broad range of chemicals by carefully controlling the molecular architecture. In addition, this perfluoroelastomer has 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 G75LT is suitable for both dynamic and static applications and can be fully moulded into O-rings (any size up to 2.5m/8ft internal diameter) and custom shapes.

### Key Attributes

- ▶ Excellent low-temperature sealing capability
- ▶ Good high temperature resistance
- ▶ Low compression set
- ▶ Excellent chemical resistance to a broad range of chemicals
- ▶ Exceptional acid and amine resistance
- ▶ Good mechanical properties

### Other materials in the range

Perlast® G75TX (high temperature grade FFKM)  
Perlast® G92E (ED resistant perfluoroelastomer)  
V71C (low temperature FKM)



### Typical Applications

- ▶ Aerospace – static O-rings
- ▶ Chemical processing – pumps & valves
- ▶ Mechanical seals
- ▶ Downstream refinery & petrochem equipment
- ▶ Cryogenic equipment
- ▶ Gas storage & transportation
- ▶ Oil & Gas – subsea equipment
- ▶ Completion tools
- ▶ Drilling tools (deepwater)
- ▶ Pipe connectors
- ▶ Pumps, valves & compressors

Property	ASTM	ISO	Value
Material Type	FFKM	FFPM	
Colour			Black
Hardness (°IRHD) (Shore A)	D1415	ISO48	75
	D2240	ISO7619	72
Tensile Strength (MPa)	D412	ISO37	12.0
Elongation at break (%)	D412	ISO37	150
100% Modulus (MPa)	D412	ISO37	7.2
Compression Set (%) 70hrs @ 200°C (392°F) 672hrs @ 200°C (392°F)	D395	ISO815	20
			45
Glass Transition (T <sub>g</sub> ) (TR10)	D3418		-33°C (-27°F)
	D1329		-32°C (-26°F)
Min Operating Temperature			-40°C (-40°F)
Max Operating Temperature			+250°C (+482°F)
Coefficient of Thermal Expansion (°C <sup>-1</sup> )			3.4 x 10 <sup>-4</sup>

Special Note: This information is to the best of our knowledge accurate and reliable. However, PPE 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 program of inspection and replacement is strongly recommended. The material properties above should not be used for specification purposes.

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## Comparative Immersion Testing (% volume swell)

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Chemical Media	Test Conditions	FEPM A70H	FEPM-ETP V76E	FFKM G75M	FFKM G75LT
Acetic Acid (50%)	72 hours @ 21°C	3.5	0.5	0.1	0.7
Acetone	72 hours @ 21°C	30	10	0.2	2.5
Ethylenediamine	72 hours @ 21°C	1	0.5	0	1
Ethylenediamine	168 hours @ 90°C	4.5	3.1	0.1	1.8
Hydrochloric Acid (37%)	72 hours @ 21°C	1.5	0.3	0.1	0.5
Methanol	72 hours @ 21°C	1	0.2	0.2	0.3
Methanol	72 hours @ 40°C	1.5	0.8	0.3	0.8
Methylethylketone (MEK)	72 hours @ 21°C	40	8.5	0.1	2
n-Hexane	72 hours @ 21°C	11.5	0.8	0.2	0.8
Nitric Acid (69% concentrated)	72 hours @ 21°C	6	0.6	0.3	1.8
Toluene	72 hours @ 21°C	25	6.3	0.1	2
Water	168 hours @ 200°C	3	1.2	1.5	2

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

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