Fluorosilicone Injection Molding

Fluorosilicone

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Technical Data: Fluorosilicone

Product Description

Define and Grades

Injection-molded fluoro silicone is a high-performance elastomer made from silicone rubber and fluorinated hydrocarbons. It exhibits excellent resistance to extreme temperatures, chemicals, and fuels, making it ideal for aerospace and automotive applications.

Common grades of injection molded fluoro silicone used for injection molding parts include:
- General-Purpose Fluorosilicone
- High-Temperature Fluorosilicone
- Fuel-Resistant Fluorosilicone
- Oil-Resistant Fluorosilicone
- Aerospace-Grade Fluorosilicone

Features and Applications

Grade	Features	Applications
General-Purpose Fluorosilicone	- Good general chemical resistance	Seals, gaskets, O-rings
High-Temperature Fluorosilicone	Exceptional heat resistance (up to 260°C)	Engine components, exhaust systems
Fuel-Resistant Fluorosilicone	- Resistance to aviation fuels and oils	Aerospace seals, fuel systems
Oil-Resistant Fluorosilicone	- Resistance to oils and hydrocarbon fuels	Automotive gaskets, fuel seals, O-rings
Aerospace-Grade Fluorosilicone	- Meets stringent aerospace standards	Critical aircraft components, aerospace seals

Physical and Mechanical

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm³)	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(℃)	(%)	(HRB)
General-Purpose	1.45	8	200	350	6	25	200	2	55
High-Temperature	1.5	10	180	400	8	30	260	2.5	60
Fuel-Resistant Fluorosilicone	1.48	9	220	370	7	28	220	2.2	58
Oil-Resistant Fluorosilicone	1.46	9	210	360	6.5	26	210	2.1	56
Aerospace-Grade	1.49	10.5	190	420	9	32	250	2.3	62

Note

The above data are reference material science data. This data reference is not binding and is not considered as authoritative test data. If your material requirements are extremely precise, please contact our material engineers.Tel | +86 18926788217 | Web | www.newayprecision.com | Contact Neway

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Benefits of Material Grades

General-Purpose Fluorosilicone

Key Properties: It offers good general chemical resistance, moderate tensile strength, and flexibility.

Applications: General-purpose fluorosilicone is commonly used in sealing applications, such as O-rings and gaskets, where resistance to various chemicals and moderate performance are required.

Reasons for Use: It provides a cost-effective solution for general sealing needs and offers chemical resistance, making it suitable for various applications.

High-Temperature Fluorosilicone

Key Properties: It excels in high-temperature resistance, maintaining properties up to 260°C.

Applications: High-temperature fluorosilicone is indispensable in engine components and exhaust systems in the automotive industry, where extreme heat resistance is crucial.

Reasons for Use: Its popularity arises from its ability to withstand extreme temperatures, ensuring reliability in high-heat environments like engine compartments.

Fuel-Resistant Fluorosilicone

Key Properties: It is resistant to aviation fuels and oils, offering good tensile strength and flexibility.

Applications: Fuel-resistant fluorosilicone is vital in aerospace applications, particularly in seals and fuel systems, where contact with aviation fuels is common.

Reasons for Use: Its popularity stems from its ability to resist aviation fuels, ensuring safety and performance in critical aerospace components.

Oil-Resistant Fluorosilicone

Key Properties: It exhibits resistance to oils and hydrocarbon fuels, combined with moderate tensile strength and flexibility.

Applications: Oil-resistant fluorosilicone is used in automotive applications like gaskets, fuel seals, and O-rings, where exposure to oils is prevalent.

Reasons for Use: It is chosen for its ability to maintain performance when in contact with oils, making it a reliable choice in the automotive industry.

Aerospace-Grade Fluorosilicone

Key Properties: It meets stringent aerospace standards, offering excellent tensile strength, flexibility, and chemical resistance.

Applications: Aerospace-grade fluorosilicone is indispensable in critical aircraft components, including seals and gaskets.

Reasons for Use: Its popularity arises from its compliance with strict aerospace standards, ensuring reliability and safety in aerospace applications.

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