



## V9M2 Fluorocarbon

Meeting Your Low-Temperature and Rapid Gas Decompression Requirements



Elastomeric seal components face unique [challenges](#) in cold environments. Under these conditions, their sealing effectiveness may be compromised due to reduced flexibility, increased brittleness, diminished rebound, and numerous other property changes. A further concern is rapid gas decompression (RGD), also known as explosive decompression (ED). This phenomenon can cause fissures and ruptures on the seal's surface, resulting in seal failure.

It is well-known that fluorocarbon (FKM), despite being a widely used material, typically has poor low-temperature capabilities. To provide our customers with a low-temperature FKM sealing solution that resists rapid gas decompression, we have formulated the V9M2 compound using Viton™ GLT polymer.

This specialty compound combines the high-temperature resilience of FKM with enhanced performance at lower temperatures, delivering a more versatile sealing solution. Its extremely low compression set is ideal for temperature and pressure cycling environments. It also has a strong resilience to a broad range of chemicals, including hot water and steam.

V9M2 has undergone third-party testing for low-temperature valve sealing performance. It achieved an outstanding result at a temperature of -40°C per MESC 77/312 standards for Fugitive Emission Production Testing. V9M2 also has undergone third-party testing set by some of the industry's most respected regulating bodies, including:

- NORSOK M-710 (Rev.2) RGD
- API 6A Sour Gas Service
- NACE TM0297 RGD
- TOTAL GS EP PVV 142 RGD



V9M2 is used in critical applications across numerous markets, including:

- Drilling
- Completions
- Pumps
- Workovers
- Compressors
- Valves

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Original Physical Properties	Standards	Values*
Hardness, Shore A	D2240	93
Tensile Strength, psi (MPa)	D412	2849 (19.64)
Elongation, %	D412	143
Modulus @ 100%, psi (MPa)	D412	2012 (13.87)
Specific Gravity, g/cm <sup>3</sup>	-	1.83
Compression Set, 70 hrs @ 200°C, %	D395 Method B	10.1
Low Temperature Brittleness Test, 3 min @ -40°C	D2137 Method C	Pass
Low Temperature Retraction Test, (TR-10), °C	D1329	-30.4
Low Temperature Valve Testing, °C	MESC SPE 77/312	-40

*\*This information is correct based on our knowledge at the date of its publication. The temperature range listed is a general guideline, and final suitability will depend on various application conditions. To ensure this material meets customers' final requirements and safety demands, we recommend customers conduct their own testing.*

### V9M2 Advantages:

- Enhanced low-temperature capabilities
- Proven resistance to rapid gas decompression (RGD)
- Low gas permeability
- Outstanding mechanical properties
- Exceptional resistance to petroleum, oil, and gas
- Resistant to a broad range of chemicals, including hot water and steam
- Good resistance in corrosive environments
- Superior performance in pressure and temperature cycling applications

Our V9M2 is ideal for O-rings, loaded U-cups, hammer union seals, and custom moulded products. For more information on V9M2, contact us at [engineering@hitechseals.com](mailto:engineering@hitechseals.com).

Looking for a general-used compound that excels in extremely low temperatures? See our [V717](#) fluorocarbon compound for details.

