

Molydisulfide-Reinforced Polytetrafluoroethylene (GFPM)

GFPM has excellent wear resistance in vacuum and inert gas applications, and can be used both in liquid services or severely dry applications. **GFPM** has high extrusion resistance, and is suitable for high-pressure and low-speed rotary applications. Dynamic surfaces in contact with a seal made from **GFPM** should have a hardness of Rc 40 or higher.

GFPM is recommended for applications that require good wear resistance in liquids at temperatures from -320 °F to +500 °F (-196 °C to +260 °C), such as down-hole logging tools, adhesive and epoxy dispensing equipment, chemical and laboratory equipment, and vacuum chambers.

Chemical Compatibility

GFPM has excellent chemical compatibility. This material is compatible with most fluids and gases, except some acids such as sulfuric, nitric and hydrofluoric acids. (For more compatibility information, request report TR-60A, or go to <http://www.balseal.com/techlib>. Select Technical Reports, then select TR-60A Chemical Compatibility Guide.)

FDA Compliance

GFPM is not FDA compliant. (Request Report 50-640 for Bal Seal's definition of FDA compliant).

Mechanical Properties

The mechanical properties of **GFPM** at ambient temperatures are:

Tensile strength	ASTM D638	2386 psi (168 kg/cm ²)
Elongation	ASTM D638	210%

The following chart shows the wear rate of **GFPM** when it comes in contact with different media at various speeds and pressures.

"K" Wear Factor In ³ -min./ft-lb-hr x 10 ⁻¹⁰ ("K" Cm ³ -min./Kg-m-hr x 10 ⁻⁷)				
AIR	WATER		OIL	
Wear Rate at 20,000 P.V.	Wear Rate at 75,000 P.V.		Wear Rate at 75,000 P.V.	
Speed (75 FPM) – pressure (267 PSI)	Speed (75 FPM) – pressure (1000 PSI)	Speed (1000 FPM) – pressure (75 PSI)	Speed (75 FPM) – pressure (1000 PSI)	Speed (1000 FPM) – pressure (75 PSI)
163.5 x 10 ⁻¹⁰ (19.39x10 ⁻⁷)	3.4x10 ⁻¹⁰ (0.4x10 ⁻⁷)	1.8 x 10 ⁻¹⁰ (0.214x10 ⁻⁷)	0.65 x 10 ⁻¹⁰ (0.077 x 10 ⁻⁷)	0.1x10 ⁻¹⁰ (0.012x10 ⁻⁷)

Color

Black

Advantages of GFPM

- Higher extrusion resistance than PTFE and G
- Higher wear resistance than PTFE, G and GC in air
- Lower friction than PTFE, G and GC in air

Other Information

For additional information, please contact our Technical Sales Representative at (949) 460-2100. Bal Seal maintains a vast library of material references and testing information.

It is essential that the customer run evaluation testing under actual service conditions with a sufficient safety factor to determine if the proposed, supplied, or purchased, Bal Seal Engineering products are suitable for the intended purpose and to confirm expected results. Bal Seal Engineering makes no warranty, express or implied, regarding Bal Seal Engineering products or of the information contained herein, including but not limited to, warranties of merchantability, performance, and fitness for a particular use or purpose. Bal Seal Engineering shall not be liable for any loss or damage of any kind or nature that may result from the use of, reference to, or reliance on, the information contained herein, including, but not limited to, consequential, special (including loss of profits) direct, indirect, incidental, or similar damages, even if Bal Seal Engineering has been advised of the possibility of such damages. © 2010 M12 Rev. C (623-11-1 and 623-64) 04-13-10

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