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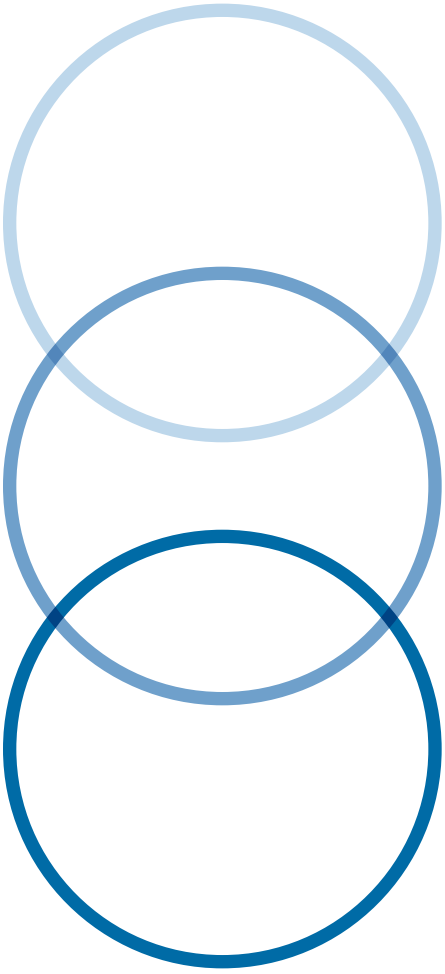

Polychlorotrifluoroethylene (P64)

Material Data Sheet
M-78 (Rev. 00, 04-29-26)

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Overview

P64 is a proprietary grade Polychlorotrifluoroethylene (PCTFE) material engineered for use in high-performance sealing applications Characteristics of this material include:

- Cryogenic stability: Maintains ductility and sealing integrity at temperatures as low as -259 °C (-434 °F)
- Low gas permeability: Superior containment, even in applications using small-molecule gases such as helium and hydrogen
- Moisture resistance: Low water absorption, ideal for aqueous and steam applications
- Low outgassing (ASTM E595): Minimal desorption and diffusion under vacuum or in elevated temperatures, well-suited for aerospace applications
- Dimensional stability: Retains size and shape within tight tolerances despite compression, mechanical load, thermal cycling, and exposure to aggressive media

As a seal jacket material, P64 delivers effective sealing performance over a wide temperature range, from -434 °F to +400 °F (-259 °C to +204 °C). It performs well in both static and dynamic service.

Chemical Compatibility

P64 exhibits outstanding resistance to most corrosive chemicals, oxidizing agents, and inorganic acids. For more details, reference Bal Seal Technical Report TR-60A, *Chemical Compatibility Guide*, in the technical library section of our website at www.balseal.com.

FDA Compatible

P64 is an “FDA compliant” material that meets FDA regulation 21 CFR 177.1380 for use in food contact applications. Bal Seal Engineering defines its compositions as “FDA Compliant” if each of the ingredients in the composition has been found by the FDA to be “safe for use in food contact,” or “acceptable for use in food contact.” This material contains no ingredients listed in the California Code of Regulations Hazardous Substances List.

Mechanical Properties

Typical Mechanical Properties of P64 at Ambient Temperatures

Property	Standard	Measure
Tensile Strength	ASTM D638	5700 psi (39.3 MPa)
Elongation	ASTM D638	100%
Density	ASTM D792	2.13
Hardness	ASTM D2240	80 Shore D
Coefficient of Friction	ASTM D3702	0.24

Color

White/Translucent

Typical Applications

Aerospace and Defense

- High-reliability sealing solution for valve seats and cryogenic components exposed to liquid propellants and extreme thermal cycling

Oil and Gas: LNG infrastructure

- Critical primary seal material for LNG transport, storage, and loading valves

Scientific and Industrial Equipment

- High-performance jacket material for cryostats and transfer lines, providing mechanical stability over a large temperature range

Other Resources

For more information, contact a technical sales representative, visit our website at www.balseal.com, or e-mail us at sales@balseal.com.

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