



TECHNICAL BULLETIN

Medical Grade Polymer Comparison Chart

Precision Associates manufactures compounds in a variety of polymers that are suitable for use in medical applications requiring body or body fluid contact. The chart below indicates, in general terms, the performance of these polymers in various applications. Specifically formulated compounds may function better or worse in actual usage. These ratings are guidelines only. Customers should determine the suitability of our compounds in their own applications.

| Polymer: | Silicone | EPDM | Fluoroelastomer | Perfluoroelastomer | Polyisoprene | Butyl | Urethane |
|------------------------------------|----------|------|-----------------|--------------------|--------------|---------------|----------|
| ASTM Designation: | VMQ | EPDM | FKM | FFKM | IR | IIR/BIIR/CIIR | EU |
| Acids (Dilute) resistance | 1 | 3 | 3 | 3 | 2 | 2 | 1 |
| Aliphatic Solvents resistance | 1 | 2 | 3 | 3 | 0 | 2 | 2-3 |
| Alkalis (Dilute) resistance | 1 | 3 | 1 | 3 | 2 | 2 | 1 |
| Animal Fats & Oils resistance | 2 | 1 | 3 | 3 | 0 | 1 | 2 |
| Aromatic Solvents resistance | 1 | 1 | 3 | 3 | 0 | 0 | 1-2 |
| Compression recovery | 2 | 2 | 2 | 2 | 3 | 2 | 2 |
| Coring (fragmentation) resistance | 2 | 1 | 1 | 1 | 3 | 2-3 | 1 |
| Gas Transmission resistance | 0 | 1 | 2 | 2 | 0 | 3 | 2 |
| Heat resistance | 3 | 2 | 3 | 3 | 1 | 2 | 1 |
| Mineral Oil resistance | 2 | 0 | 3 | 3 | 0 | 0 | 3 |
| Moisture Vapor Barrier performance | 0 | 1 | 2 | 2 | 2 | 3 | 1 |
| Ozone resistance | 3 | 3 | 3 | 3 | 0 | 0 | 3 |
| Radiation resistance | 3 | 2 | 2 | 2 | 2 | 2 | 2-3 |
| Water Absorption resistance | 3 | 2 | 2 | 3 | 1 | 3 | 1 |
| Implantable Device (long term) | 3* | 0 | 0 | 0 | 0 | 0 | 0 |

0 = Poor 1 = Fair 2 = Good 3 = Excellent

* Requires compound approved for LTI

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