



Manufacturer of TFE-O-SIL<sup>®</sup> O-Rings & Gaskets Since 1976  
FEP & PFA Encapsulated Silicone, Fluoroelastomer & EPDM

## PFA (Perfluoroalkoxy) Detailed Properties

**USP Class VI compliant - FDA Conforming - Title 21 CFR 177.2600 3A Sanitary Standard compliant**

*The table below lists a generally accepted summary of properties that we believe to be reliable. Please note that many of these resins are produced in several varieties and property characteristics may vary. Therefore, determination of resin is dependent on the application and this table is only meant to serve as a general guideline.*

| PFA Properties                                       | ASTM or Unit | PFA Properties           |
|------------------------------------------------------|--------------|--------------------------|
| <b>MECHANICAL PROPERTIES</b>                         |              |                          |
| Specific Gravity                                     | D792         | 2.15                     |
| Elongation, %                                        | D638         | 280~400                  |
| Tensile Strength (psi)                               | D638         | 4,000~4,500              |
| Flexural Strength (psi)                              | D790         | no break                 |
| Compressive Strength                                 | D695         |                          |
| Tensile Elastic Modulus<br>(Young's Modulus) (psi)   | D638         | 72,500~87,000            |
| (psi) Flexural Modulus                               | D790         | 94,000~99,000            |
| 103MPa (103kgf/cm <sup>2</sup> )                     | D790         | 0.6-0.7 (6.6-7.0)        |
| Flex Life<br>(MIT cycles)                            | D2176        | 10,000~500,000<br>80,000 |
| Hardness Durometer<br>Shore D                        | D636         | D55~60                   |
| Coefficient of Friction                              | On steel     | 0.2                      |
| Abrasion Resistance<br>1000 revs.                    | Taber        | 9~17                     |
| Impact Strength IZOD<br>73°F/23°C, notched ft/lbs/in | D256         | No break                 |

**PFA Properties****ASTM or Unit****PFA Properties****THERMAL PROPERTIES**

|                               |                     |          |
|-------------------------------|---------------------|----------|
| Melting Point                 | °C                  | 305      |
|                               | (°F)                | (582)    |
| Upper Service                 | °C                  | 260      |
| <i>Temperature(20,000h)</i>   | (°F)                | (500)    |
| Flame Rating**                | UL 94               | V-0      |
| Thermal Conductivity          | BTU/hr/ft2/deg F in | 1.3      |
|                               | cal/sec/cm2, °C/cm  | 6 x 10-6 |
| Linear Coefficient of         | D696                | 13       |
| Thermal Expansion 10-5 °C     |                     |          |
| Heat of Fusion                | BTU/LB              | 13       |
| Heat of Combustion            | BTU/LB              | 2,300    |
| Low Temperature Embrittlement | °C                  | -268     |
|                               | (°F)                | (-450)   |

**ELECTRICAL PROPERTIES**

|                           |            |       |
|---------------------------|------------|-------|
| Dielectric Constant       | D150/103Hz | 2.1   |
|                           | D150/106Hz | 2.1   |
| Dielectric Strength       | D149       | >2000 |
| <i>10 mil film</i>        |            |       |
| Volume Resistivity ohm-cm | D257       | >1018 |
| Surface Resistivity       | D257       | >1017 |
| <i>ohm/sq.</i>            |            |       |

**PFA Properties****ASTM or Unit****PFA Properties****GENERAL PROPERTIES**

|                                       |             |           |
|---------------------------------------|-------------|-----------|
| Chemical/Solvent<br><i>Resistance</i> | D543        | Excellent |
| Water Absorption, 24h                 | %           | <0.03     |
| Deformation Under Load                | *D621/100°C | 2.4       |
|                                       | **D621/25°C | 2.7       |
| Refractive Index                      | -           | 1.34      |
| Limiting Oxygen Index                 | >95         | >95       |

\*6.8 MPa (986 psi),24h

\*\*13.7 MPa (1987 psi),24h