



HANNA RUBBER COMPANY

Specification Sheet

Expanded PTFE Gasket Sheet

DESCRIPTION

Hanna Rubber **EPTFE** is a soft, compressible gasket sheet made of 100% pure, multi-directionally expanded PTFE. **EPTFE** is resistant to virtually all chemicals and has excellent creep and cold flow resistance. It is capable of withstanding a wide range of pressure & temperature conditions and is ideal for tight sealing of bolted joints in all process industries including chemical, petrochemical, food, power generation, pulp/paper and general industrial.

CHARACTERISTICS

- COMPATIBLE WITH MOST CHEMICALS**

EPTFE is 100% pure Polytetrafluoroethylene (PTFE). There are no fillers or binders to limit chemical compatibility. **EPTFE** can be used in virtually any service.

- SOFT AND CONFORMABLE**

Upon compression, **EPTFE** conforms to surface irregularities, making it ideal for rough, pitted, scratched or otherwise damaged flange surfaces.

- RESISTS CREEP AND COLD FLOW**

Unlike molded/skived PTFE which are highly subject to creep, **EPTFE** exhibits good creep and cold flow resistance, along with good bolt torque retention.

- DIMENSIONALLY STABLE**

EPTFE retains its width upon compression, making it ideal for use in narrow flanges.

- UNLIMITED SHELF LIFE**

EPTFE exhibits no age deterioration, and as a result has unlimited shelf life.

- U-V RESISTANT**

EPTFE is not affected by ultraviolet, and is resistant to oxidation, discoloration and embrittlement.

- FLAME RESISTANT**

EPTFE is flame-resistant due to its high melting point and auto-ignition temperature.

SPECIFICATIONS

| | |
|-----------------------|--|
| EPTFE | 1500mm x 1500mm (59" x 59") +/- 20mm (3/4") |
| Available Thicknesses | 0.75mm (1/32") 3.0mm (1/8") 1.0mm (0.040") 5.0mm (3/16") 1.5mm (1/16") 6.0mm (1/4") Upon request: 0.5mm, 2.0mm, 2.5mm, 4.0mm, 5.0mm, 9.0mm |
| Thickness Tolerance | 0.5mm – 2.0mm +15%, -10% 3.0mm – 9.0mm +10%, -10% |
| EPTFE | 2000mm x 1950mm (78-3/4" x 76-3/4") +/- 20mm (3/4") |
| Thickness | 3mm (1/8") +/- 10% |
| Composition | 100% PTFE |
| Color | White |
| Density | 0.8 g/cc |
| Pressure | Full Vacuum to 3,000 psi (210 bar) |
| Temperature | -400°F to 500°F (-240°C to 260°C) |
| pH | 0-14 (not to be used with molten alkali metals or elemental fluorine) |

APPROVALS & CERTIFICATIONS

| | |
|----------------|---|
| FDA | 21CFR177.1550 Indirect Food Additives – Polymers |
| EU Reg 10/2011 | Plastic materials intended for contact with food |
| TA LUFT | VDI 2440 Emission Control – Mineral Oil Refineries |
| BAM | Reactivity with Oxygen |
| DVGW | DIN 3535-6 Gaskets for Gas Supply (gas valves, gas appliances and gas mains) |
| USP Class VI | Biocompatibility |

QUALITY ASSURANCE

ISO 9001, ISO 14001, OHSAS 18001

Comparable to Teadit 24SH, Inertech Inertex SQ-S, Thermoseal Soft-Seal®



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| TYPICAL PHYSICAL PROPERTIES | | | PERFORMANCE | | |
|--|---|---------------------|---|---|---------------|
| Compressibility ASTM F36 | 61% | | <p>3000 1200 1000 800 600 400 200 0 FV</p> <p>-400 0 100 200 300 400 500 600 °F</p> <p>— Suitable subject to chemical compatibility — Likely suitable – contact TFCO for evaluation — Contact TFCO for evaluation</p> | | |
| Recovery ASTM F36 | 18% | | | | |
| Tensile Strength ASTM F152 | 3200 psi (22 MPa) | | | | |
| Elongation ASTM F152 | 200% | | | | |
| DESIGN VALUES | | | | | |
| “m” factor | 2.5 | | | | |
| “Y” factor | 2900 psi (20 MPa) | | | | |
| P x T (psi x °F) max | 350,000 | | | | |
| SEALABILITY | | | | | |
| EN 13555 (Gasket Thickness = 1/8”) | | | | | |
| Tightness Class, L | Gasket Stress MPa (psi) | Conditions | | | |
| Q _{min} / L _{0.01} | 18 (2,610) | He 10 bar (145 psi) | | | |
| Q _{Smin} / L _{0.01} | 5 (725) | | | | |
| Q _{min} / L _{0.01} | 27 (3,915) | He 40 bar (580 psi) | | | |
| Q _{Smin} / L _{0.01} | 10 (1,450) | | | | |
| Q _{min} / L _{0.0001} | 33 (4,785) | He 10 bar (145 psi) | | | |
| Q _{Smin} / L _{0.0001} | 5 (725) | | | | |
| Q _{min} / L _{0.0001} | 38 (5,510) | He 40 bar (580 psi) | | | |
| Q _{Smin} / L _{0.0001} | 19 (2,755) | | | | |
| TA Luft (VDI 2440) | Leak Rate = 4.4E-07 mbar x l / (s x m) < 1.0E-04 mbar x l / (s x m) PASS | | | | |
| RELAXATION | | | HOT BLOWOUT TESTING (GASKET THICKNESS = 1/8”) | | |
| EN 13555 (Relaxation Ratio, P _{QR} , for Stiffness C = 500 kN/mm and Gasket Thickness = 1/8”) | | | HOB2 with Temperature Cycles | | |
| Gasket Stress | P _{QR} | Temperature | Class 300 (1010 psi) – Reserve Temperature 500°F | | |
| 30 MPa (4,350 psi) | 0.92 | 25°C (77°F) | HOB2 without Temperature Cycles | | |
| 30 MPa (4,350 psi) | 0.42 | 150°C (302°F) | Class 150 – No blowout at max test temperature of 700°F (371°C) at 435 psi (30 bar) ¹ | | |
| 30 MPa (4,350 psi) | 0.34 | 230°C (446°F) | HOB1 (constant Temperature with Increasing Pressure) | | |
| 50 MPa (7,250 psi) | 0.92 | 25°C (77°F) | Single Test – No blowout at max test pressure of 2500 psi (172 bar) @ 302°F (150°C) ¹ | | |
| 80 MPa (11,600 psi) | 0.91 | 25°C (77°F) | ¹ Result represents test data, not rating | | |
| ASTM F38 Creep Relaxation | | | 21% | | |
| RELAXATION | | | OXYGEN AND GAS CERTIFICATIONS | | |
| EN 13555 (Relaxation Ratio, P _{QR} , for Stiffness C = 500 kN/mm and Gasket Thickness = 1/8”) | | | BAM – Gaseous Oxygen Service | 16 bar (230 psi) @ 60°C (140°F) | |
| | | | DVGW – Gas DIN 3535-6 | Leak Rate = 6.2E-03 mg / (s x m) < 0.1 mg / (s x m) PASS | |
| RELAXATION | | | CRUSH STRENGTHS (GASKET THICKNESS = 1/8”) | | |
| Gasket Stress | P _{QR} | Temperature | Q _{Smax} , MPa (psi) | P _{QR} | Temperature |
| 30 MPa (4,350 psi) | 0.92 | 25°C (77°F) | 200 (29,000) | 0.94 | 25°C (77°F) |
| 30 MPa (4,350 psi) | 0.42 | 150°C (302°F) | 50 (7,250) | 0.41 | 150°C (302°F) |
| 30 MPa (4,350 psi) | 0.34 | 230°C (446°F) | 40 (5,800) | 0.34 | 230°C (446°F) |