# OnFlex™ HT 50A-3S2099

## Thermoplastic Elastomer

## Key Characteristics

**Product Description**

OnFlex™ HT thermoplastic elastomer compounds are based on hydrogenated styrenic block copolymers. This range of compounds is specially formulated to deliver very good compression set performance at elevated temperatures and a high heat resistance. Furthermore, OnFlex™ S HT compounds are in compliance with EN 681-2 and offer excellent mechanical properties, a wide hardness range and good processability.

| General | | | |
|---|---|---|---|
| Material Status | • Commercial: Active | | |
| Regional Availability | • Africa & Middle East<br>• Asia Pacific | • Europe<br>• Latin America | • North America |
| Features | • High Heat Resistance | • Low Compression Set | • Ozone Resistant |
| Uses | • Pipe Seals | | |
| RoHS Compliance | • RoHS Compliant | | |
| Forms | • Pellets | | |
| Processing Method | • Extrusion | • Injection Molding | |

## Technical Properties [1]

| Physical | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Density | 1.00 g/cm³ | 1.00 g/cm³ | ISO 1183 |
| **Elastomers** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Tensile Stress | | | ISO 37 |
| Across Flow : 100% Strain | 160 psi | 1.10 MPa | |
| Flow : 100% Strain | 247 psi | 1.70 MPa | |
| Tensile Stress | | | ISO 37 |
| Across Flow : 300% Strain | 276 psi | 1.90 MPa | |
| Flow : 300% Strain | 421 psi | 2.90 MPa | |
| Tensile Stress [2] | | | DIN 53504 |
| Across Flow : Break, 73°F (23°C), 0.0787 in (2.00 mm) | 1360 psi | 9.40 MPa | |
| Flow : Break, 73°F (23°C), 0.0787 in (2.00 mm) | 754 psi | 5.20 MPa | |
| Tensile Elongation [2] | | | DIN 53504 |
| Across Flow : Break, 73°F (23°C), 0.0787 in (2.00 mm) | 800 % | 800 % | |
| Flow : Break, 73°F (23°C), 0.0787 in (2.00 mm) | 560 % | 560 % | |
| Tear Strength | 154 lbf/in | 27.0 kN/m | ISO 34-1 |
| Compression Set | | | ISO 815 |
| 14°F (-10°C), 22 hr | 36 % | 36 % | |
| 14°F (-10°C), 72 hr | 50 % | 50 % | |
| 73°F (23°C), 72 hr | 20 % | 20 % | |
| 158°F (70°C), 22 hr | 27 % | 27 % | |
| 212°F (100°C), 22 hr | 42 % | 42 % | |
| 257°F (125°C), 22 hr | 46 % | 46 % | |
| 302°F (150°C), 22 hr | 69 % | 69 % | |

| Elastomers | Typical Value (English) | Typical Value (SI) | Test Method |
|---|---|---|---|
| Stress Relaxation | | | ISO 3384 |
| 73°F (23°C) [3] | 24 % | 24 % | |
| 73°F (23°C) [4] | 13 % | 13 % | |
| **Hardness** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Shore Hardness | | | DIN 53505 |
| Shore A, 3 sec, 73°F (23°C), 0.236 in (6.00 mm), Injection Molded | 50 | 50 | |
| IRHD Hardness | 60 | 60 | ISO 48 |
| **Aging** | **Typical Value (English)** | **Typical Value (SI)** | **Test Method** |
| Change in Tensile Strength in Air | | | DIN 53504 |
| 158°F (70°C), 168 hr, 0.0787 in (2.00 mm) | -3.0 % | -3.0 % | |
| Change in Tensile Strain at Break in Air | | | DIN 53504 |
| 158°F (70°C), 168 hr, 0.0787 in (2.00 mm) | 3.0 % | 3.0 % | |
| Change in Shore Hardness in Air | | | DIN 53505 |
| Shore A, 158°F (70°C), 168 hr | 3.0 | 3.0 | |
| Change in Volume | | | ISO 1817 |
| 158°F (70°C), 72 hr, in ASTM #1 Oil | 16 % | 16 % | |
| 158°F (70°C), 168 hr, in Water | -0.60 % | -0.60 % | |
| **Additional Information** | **Typical Value (English)** | **Typical Value (SI)** | |
| Generic Material Type | Styrenic Thermoplastic Elastomer (TES) | Styrenic Thermoplastic Elastomer (TES) | |

Properties are measured using injection molded plaques.

## Processing Information

| Injection | Typical Value (English) | Typical Value (SI) |
|---|---|---|
| Processing (Melt) Temp | 356 to 428 °F | 180 to 220 °C |
| Mold Temperature | 86 to 140 °F | 30 to 60 °C |
| Injection Rate | Fast | Fast |

### Notes

[1] Typical values are not to be construed as specifications.

[2] 7.9 in/min (200 mm/min)

[3] 100d, 25% compression, Method A

[4] 168hrs, 25% compression, Method A