

Sarlink® TPE ML-1640N NAT (PRELIMINARY DATA)

Thermoplastic Elastomer
Teknor Apex Company

Message:

Sarlink ML-1600 series is a high performance, high flow thermoplastic elastomer series, available in NAT and BLK designed for automotive interior applications. Sarlink ML-1640N NAT is a low hardness, medium density grade with excellent surface appearance suitable for injection molding.

| General Information | | | |
|---|---------------------------------|-------------------|-------------|
| Features | Sunlight Resistant | | |
| | Good formability | | |
| | Good flexibility | | |
| | Good tear strength | | |
| | Good adhesion | | |
| | High liquidity | | |
| | Good chemical resistance | | |
| | Good toughness | | |
| | Fill | | |
| | Hardness, low | | |
| | Excellent appearance | | |
| | Elastic | | |
| | Medium density | | |
| Uses | Washer | | |
| | Application in Automobile Field | | |
| | Car interior parts | | |
| | Soft touch application | | |
| | Soft handle | | |
| | Rubber substitution | | |
| | Knob | | |
| RoHS Compliance | RoHS compliance | | |
| Appearance | Natural color | | |
| Forms | Particle | | |
| Processing Method | Injection molding | | |
| Physical | Nominal Value | Unit | Test Method |
| Density | 1.00 | g/cm ³ | ISO 1183 |
| Melt Mass-Flow Rate (MFR) (190°C/2.16 kg) | 6.0 | g/10 min | ASTM D1238 |

| Hardness | Nominal Value | Unit | Test Method |
|---|---------------|------|-------------|
| Durometer Hardness | | | ISO 868 |
| Shore A, 1 second, injection molding | 43 | | ISO 868 |
| Shore A, 5 seconds, injection molding | 41 | | ISO 868 |
| Shore A, 15 seconds, injection molding | 39 | | ISO 868 |
| Elastomers | Nominal Value | Unit | Test Method |
| Tensile Stress ¹ | | | ISO 37 |
| Transverse flow: 100% strain | 0.840 | MPa | ISO 37 |
| Flow: 100% strain | 1.26 | MPa | ISO 37 |
| Tensile Stress ² | | | ISO 37 |
| Transverse flow: Fracture | 5.70 | MPa | ISO 37 |
| Flow: Fracture | 4.30 | MPa | ISO 37 |
| Tensile Elongation ³ | | | ISO 37 |
| Transverse flow: Fracture | 980 | % | ISO 37 |
| Flow: Fracture | 820 | % | ISO 37 |
| Tear Strength ⁴ | | | ISO 34-1 |
| Transverse flow | 16 | kN/m | ISO 34-1 |
| Flow | 18 | kN/m | ISO 34-1 |
| Compression Set ⁵ | | | ISO 815 |
| 23°C, 22 hr | 16 | % | ISO 815 |
| 70°C, 22 hr | 33 | % | ISO 815 |
| 90°C, 70 hr | 61 | % | ISO 815 |
| 125°C, 70 hr | 90 | % | ISO 815 |
| Aging | Nominal Value | Unit | Test Method |
| Change in Tensile Strength in Air ⁶ | | | ISO 188 |
| Transverse flow: 110°C, 1008 hr | 23 | % | ISO 188 |
| Flow: 110°C, 1008 hr | 33 | % | ISO 188 |
| Transverse flow: 100% strain 110°C, 1008 hr | 0.96 | % | ISO 188 |
| Flow: 100% strain 110°C, 1008 hr | 3.0 | % | ISO 188 |
| Transverse flow: 125°C, 168 hr | 22 | % | ISO 188 |
| Flow: 125°C, 168 hr | 33 | % | ISO 188 |
| Transverse flow: 100% strain 125°C, 168 hr | 2.3 | % | ISO 188 |
| Flow: 100% strain 125°C, 168 hr | 7.5 | % | ISO 188 |
| Change in Tensile Strain at Break in Air ⁷ | | | ISO 188 |
| Transverse flow: 110°C, 1008 hr | 11 | % | ISO 188 |
| Flow: 110°C, 1008 hr | 15 | % | ISO 188 |
| Transverse flow: 125°C, 168 hr | 27 | % | ISO 188 |
| Flow: 125°C, 168 hr | 18 | % | ISO 188 |
| Change in Shore Hardness in Air | | | ISO 188 |
| Shao A, 110°C, 1008 hr ⁸ | 3.0 | | ISO 188 |
| Shao A, 110°C, 1008 hr ⁹ | 2.5 | | ISO 188 |

| | | |
|--------------------------------------|------|---------|
| Shao A, 110°C, 1008 hr ¹⁰ | 0.30 | ISO 188 |
| Shao A, 125°C, 168 hr ¹¹ | 1.8 | ISO 188 |
| Shao A, 125°C, 168 hr ¹² | 1.4 | ISO 188 |
| Shao A, 125°C, 168 hr ¹³ | 0.90 | ISO 188 |

| Fill Analysis | Nominal Value | Unit | Test Method |
|--|---------------|------|-------------|
| Apparent Viscosity (200°C, 206 sec ⁻¹) | 122 | Pa·s | ASTM D3835 |

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| Injection | Nominal Value | Unit |
|------------------------|---------------|------|
| Rear Temperature | 171 - 193 | °C |
| Middle Temperature | 177 - 199 | °C |
| Front Temperature | 182 - 204 | °C |
| Nozzle Temperature | 188 - 210 | °C |
| Processing (Melt) Temp | 188 - 210 | °C |
| Mold Temperature | 25 - 66 | °C |
| Injection Pressure | 1.38 - 6.89 | MPa |
| Injection Rate | Moderate-Fast | |
| Back Pressure | 0.172 - 0.345 | MPa |
| Screw Speed | 50 - 100 | rpm |
| Cushion | 3.81 - 25.4 | mm |

Injection instructions

Drying is not necessary. However, if moisture is a problem, dry the pellets for 2 to 4 hours at 150°F (65°C).

| NOTE | |
|------|--|
| 1. | Type 1, 510mm/min |
| 2. | Type 1, 510mm/min |
| 3. | Type 1, 510mm/min |
| 4. | B method, right angle specimen (without cut), 510mm/min |
| 5. | Type a |
| 6. | Type 1 |
| 7. | Type 1 |
| 8. | 15 sec |
| 9. | 5 sec |
| 10. | 1 sec |
| 11. | 15 sec |
| 12. | 5 sec |
| 13. | 1 sec |

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519
Phone: +86 13424755533
Email: sales@su-jiao.com
No. 215, Lianhe North Road, Fengxian District, Shanghai, China

