TPSiV® 4000-60A

SILICONE THERMOPLASTIC ELASTOMER

When you combine the strength, toughness, and abrasion resistance of thermoplastic elastomer with the soft silkiness, UV and chemical resistance, and colorability of silicone, you get DuPont™ TPSiV®. Durable, yet both silky and non-tacky (dirt-resistant), TPSiV® delivers exceptional performance and aesthetics.
TPSiV® products incorporate vulcanized silicone in a thermoplastic matrix and can be customized for specific applications and can be recycled and reused in your manufacturing processes. This makes them remarkably versatile and reliable for a wide range of applications.

TPSiV® 4000-60A thermoplastic elastomer is a UV stable material with excellent abrasion and scratch resistance. It exhibits excellent bonding to polycarbonate, ABS and similar polar substrates. It is a product targeted for soft touch overmolding on smartphones, portable electronic cases and wearable electronic devices.

Rheological properties

Melt mass-flow rate	10	g/10min	ISO 1133
Melt mass-flow rate, Temperature	190	°C	ISO 1133
Melt mass-flow rate, Load	10	kg	ISO 1133
Moulding shrinkage, parallel	2.5	%	ISO 294-4, 2577
Flow length	260	mm	
Flow length - pressure	8	MPa	

Typical mechanical properties

Stress at 100% elongation	2.2	MPa	ISO 527-1/-2 or ISO 37
Stress at break	5.2	MPa	ISO 527-1/-2 or ISO 37
Elongation at break	>300	%	ISO 527-1/-2 or ISO 37
Flexural Modulus	24.4	MPa	ISO 178
Flexural Strength	1.51	MPa	ISO 178
Shore A hardness, 15s	62		ISO 48-4 / ISO 868
Compression set at 23°C	33	%	ISO 815
Compression set at 70°C, 24h	87	%	ISO 815
Tear strength, normal	30	kN/m	ISO 34-1

[1]: Cross direction

Other properties

Density	1100	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 6	h
Processing Moisture Content	≤0.05	%
Melt Temperature Optimum	190	°C
Max. screw tangential speed	0.4	m/s
Mold Temperature Optimum	30	°C
Min. mould temperature	20	°C

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Max. mould temperature	40	°C

Extrusion

Drying Temperature	70 - 90	°C
Drying Time, Dehumidified Dryer	2 - 6	h
Processing Moisture Content	≤0.05	%
Melt Temperature Optimum	170	°C
Melt Temperature Range	160 - 180	°C

Characteristics

Compatibility	Polycarbonate, Styrenics, Acrylic Polymers

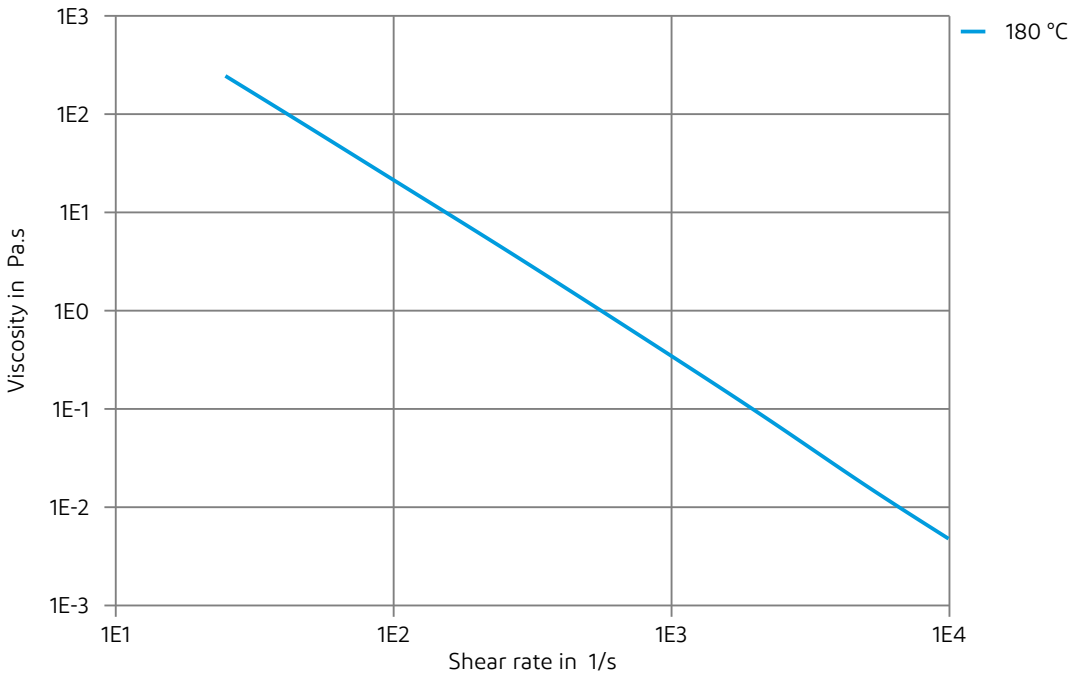
Additional information

Injection molding	TPSiV 4 series grades absorb moisture from the air. The extend and rate of moisture uptake depend on the TPSiV grade, storage conditions and climate. To ensure trouble-free processing and avoid any loss of quality, we recommend drying to a moisture content of <= 0.05% (500 ppm)
How to use	TPSiV® elastomers products can be manufactured using standard thermoplastic manufacturing processes, including overmolding or co-molding with plastic substrates such as polycarbonate, ABS and nylons. TPSiV® elastomers self-adhere to hard plastics to enable unique overmolding options. The extremely silky feel of TPSiV elastomers does not require additional processing or coating steps.

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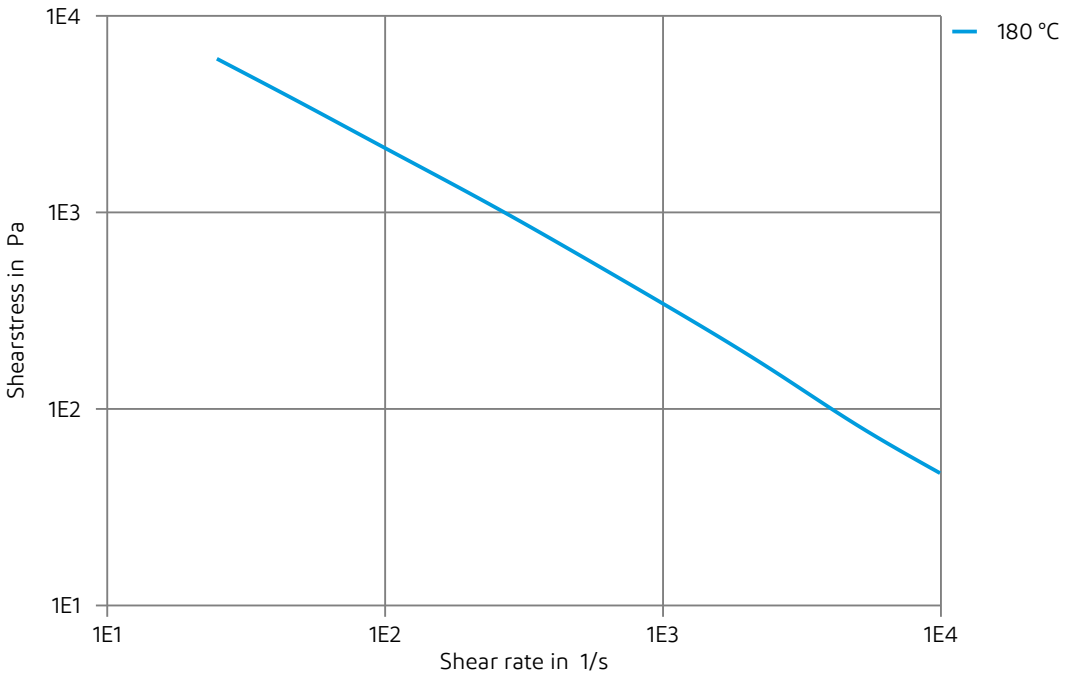
Viscosity-shear rate



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Shearstress-shear rate



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