TPSiV® 4000-60A

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	20	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

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	85	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Melt Temperature Optimum	190	°C
Max. screw tangential speed	0.4	m/s
Mold Temperature Optimum	30	°C
Min. mould temperature	20	°C
Max. mould temperature	40	°C

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Extrusion

Drying Temperature	85	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Melt Temperature Optimum	170	°C
Melt Temperature Range	160 - 180	°C

Characteristics

Compatibility	Polycarbonate, Styrenics, Acrylic Polymers

Additional information

How to use	TPSiV® elastomers products can be manufactured using standard thermoplastic manufacturing processes, including overmolding or co-molding, extrsuion and co-extrusion 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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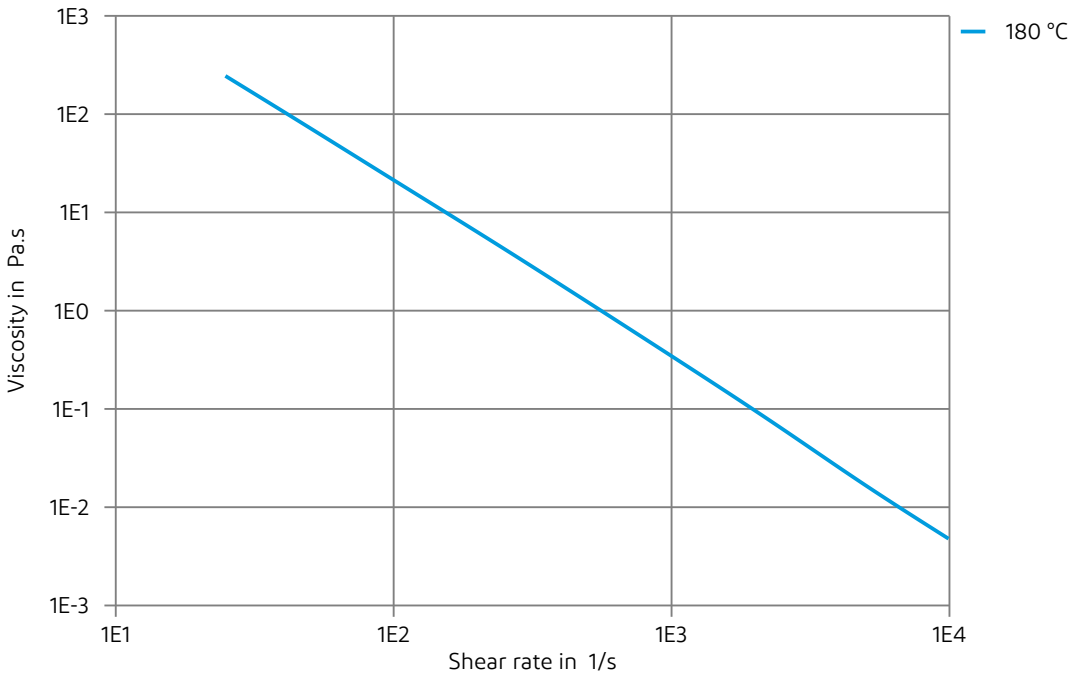
Viscosity-shear rate



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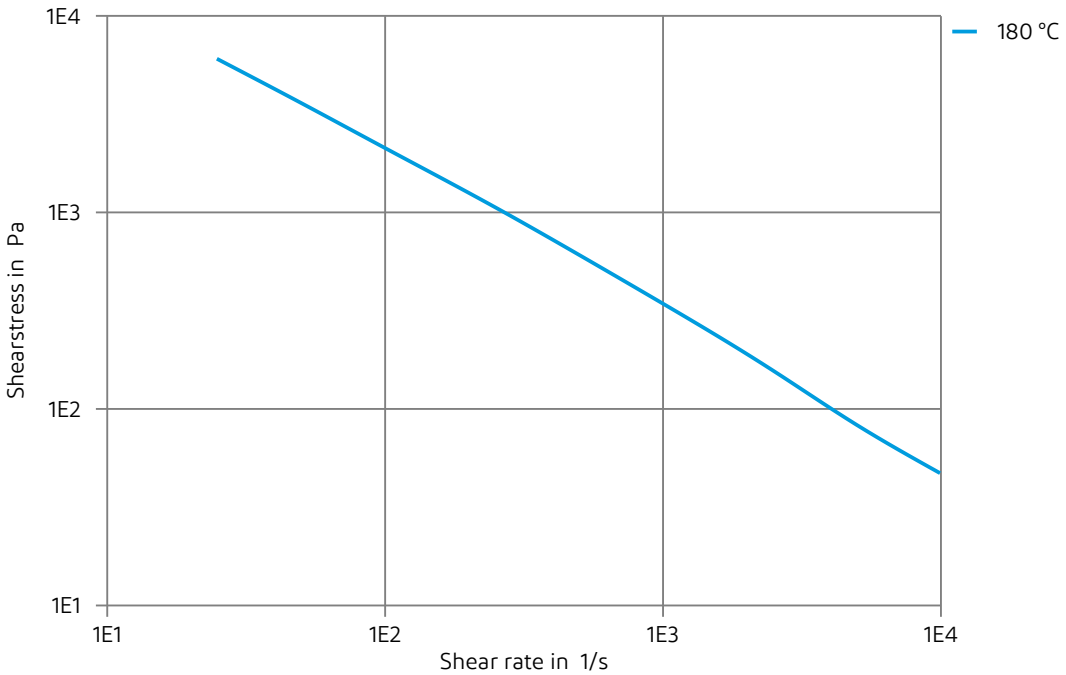
Shearstress-shear rate



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