



## » PRODUCT OVERVIEW

# Stat-Tech™ TPE Static Dissipative & Electrically Conductive Thermoplastic Elastomers

Stat-Tech™ TPEs are electrically conductive thermoplastic elastomers engineered to protect critical electronics from electrostatic discharge (ESD), and electromagnetic and radio frequency interference (EMI/RFI). They can offer the precise level of electrical conductivity required for your application and are available in a range of Shore hardness levels. Good electrical performance can be offered at a lower hardness compared to silicone or rubber alternatives.

Stat-Tech TPEs can be both injection molded and extruded, giving great design freedom for more complex geometries. Compared to rubber and silicone alternatives they simplify manufacturing with single-step fabrication, reducing the energy used in production and can be overmolded directly onto non-polar polymer substrates such as polypropylene (PP) and polyethylene (PE).

Depending on your application's performance needs, we can develop custom Stat-Tech TPE grades to provide anti-static properties, dissipation, conduction and EMI/RFI shielding. Stat-Tech TPEs are well-positioned to perform in applications such as industrial conveyor belts and controllers, ADAS systems and electronic devices.

## KEY CHARACTERISTICS

- Electrical resistivity range from  $10^{-10}$ – $10^{10}$   $\Omega$
- Hardness range from 40–85 Shore A
- Protects critical electrical components from EMI/RFI
- Reduces static build-up
- Simplifies manufacturing
- Overmolds directly onto polymer substrates
- Meets regulatory compliance requirements of ATEX and ESD
- Food contact compliance grades are available

## MARKETS & APPLICATIONS

Electrical applications that require a flexible material, and protection from EMI/RFI and static build-up. These include:

- **Industrial** – Conveyor belts (food production and pharmaceutical industries) and controls (joy sticks, machinery handles and knobs, corrugated bellows, tool grips)
- **Electrical and electronic devices** – Seals and gaskets, radars and sensors
- **ADAS components** – Camera systems, navigation systems, vehicle control systems, infotainment systems

## STAT-TECH SOLUTIONS

Material Description	Base Resin	Color	Hardness Range	Surface Resistivity ( $\Omega$ )	Key Characteristics
ST0100-5003 ESD FD White VN8904 GP0F025721	TPU	White	85 ShA	$10^8$ to $10^9$	High elongation, static conductive, FDA compliance
ST0100-5006 ESD X2 Natural	TPU	Natural	85 ShA	$10^7$ to $10^9$	High elongation, static conductive
ST0200-5001 ESD Natural X1	TPE	Natural	40 ShD	$10^7$ to $10^9$	High elongation, permanent anti-static, static conductive
SST0200-5004 ESD Black	TPE	Black	40 ShA	$10^3$ to $10^5$	Electrically conductive, static dissipative, lower hardness
ST0200-5002 EC ES Black	TPE	Black	60 ShA	$10^0$ to $10^2$	Electrically conductive, high elongation
ST0200-5009 EC Black	TPE	Black	60 ShA	$10^0$ to $10^2$	Electrically conductive, high elongation

## KEY TECHNICAL PROPERTIES

Property	Unit	Standard Test Methods	ST0100-5003 ESD FD White VN8904 GP0F02571	ST0100-5006 ESD X2 Natural	ST0200-5001 ESD Natural X1	ST0200-5004 ESD Black	ST0200-5002 EC ES Black	ST0200-5009 EC Black
Base Resin			TPU	TPU	TPE	TPE	TPE	TPE
<b>Physical Properties</b>								
Hardness	Shore	ISO 48-4	85A	85A	50D	40A	60 A	60A
Density		ISO 1183	1.19	1.15	1	1.01	0.965	1.21
<b>Mechanical Properties</b>								
Tensile Strength (Break)	Mpa	DIN 53404	10	15	15	4	5.7	2.5
Elongation, Break	%	DIN 53504	600	650	500	300	400	250
<b>Electrical Properties</b>								
Surface Resistivity	$\Omega$	IEC 60093	$10^8$ to $10^9$	$10^7$ to $10^9$	$10^7$ to $10^9$	$10^3$ to $10^5$	$10^0$ to $10^2$	100 to 102
Volume Resistivity	$\Omega$ .cm	IEC 60093	$10^8$ to $10^9$	$10^7$ to $10^9$	$10^7$ to $10^9$	$10^3$ to $10^5$	$10^0$ to $10^2$	100 to 102
Color			White	Natural	Natural	Black	Black	Black

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