



# ROYALSTAT™ ELECTRICALLY CONTROLLED PRODUCTS

INNOVATIVE CONDUCTIVE AND STATIC  
DISSIPATIVE THERMOPLASTIC SHEET



**ROYALITE**



## SHAPING THE FUTURE OF ELECTRICALLY CONTROLLED THERMOPLASTIC SOLUTIONS

RoyalStat™ offers thermoplastic solutions that include conductive and anti-stat sheet designed to provide permanent protection against electrostatic discharge.

### Key material features and characteristics.

- Protection for sensitive devices during manufacture, assembly, and storage
- Available in a wide range of material chemistries
- UL® listed, anti-static rigid sheet
- Fabrication capabilities: Machine, saw, drill, rout and grind
- High stiffness and abrasion resistance with excellent thermoformability
- Dimensional stability typical for today's robotic material handling systems



## Conductive Plastics

Our innovative conductive plastics feature several material chemistries for manufacturing everything from shipping containers for sensitive software chips and aviation fuel caps to temporary floor material used during avionics assembly.

## Anti-Stat Products

The anti-stat products are designed for medical, electronic and food packaging markets where there is a need to control and minimize static buildup and discharge. Plus their impact-resistant qualities provide optimal, long-term performance.

## Proven conductive plastics static protection sheets.

RoyalStat™ Electrostatic Dissipative (ESD) thermoplastic sheet meets permanent static protection requirements and these products meet minimum static decay requirements outlined in MIL-B-81705C and NFPA Code 99 specifications.

CONDUCTIVE SHEET			
PRODUCT	MATERIAL	DESCRIPTION/APPLICATIONS	SPECIFICATIONS
R63	PVC/ABS	Conductive, fire-rated PVC/ABS rigid sheet <b>Applications:</b> Dissipation of electrostatic charges, IC chip carriers, trays and tray dividers, available black only	Meets: Static Decay MIL-B-81705C Meets: NFPA Code 99 Listed: UL 94 V-1 @ > 0.066" Surface resistivity < 10 <sup>5</sup> Ω
R64	HMWPE	Conductive HMWPE rigid sheet <b>Applications:</b> Dissipation of electrostatic charges, trays, IC chip carriers, fuel container lids, available black only	Passes: UL 94 HB Heat Deflection Temperature (HDT) 195°F Surface resistivity < 10 <sup>5</sup> Ω
R632	PVC/ABS	Conductive, fire-rated PVC/ABS rigid sheet <b>Applications:</b> Dissipation of electrostatic charges; Protects internal components from ESD in electronics; Container for explosive devices, available black only	Meets: Static Decay MIL-B-81705C Meets: NFPA Code 99 Listed: UL 94 V-1 @ > 0.058" Listed: UL 94 V-0 @ > 0.090" Surface resistivity < 10 <sup>5</sup> Ω
R675	PS	Conductive, fire-rated PS rigid sheet <b>Applications:</b> Dissipation of electrostatic charges, IC chip carriers, trays and tray dividers, available black only	Surface resistivity < 10 <sup>5</sup> Ω Meets: Static Decay MIL-B-81705C Meets: NFPA Code 99



## Versatile and reliable anti-stat products

Spartech's RoyalStat™ anti-stat products are made with PETG, APET, rPET, or HIPS materials and meet all necessary requirements to control and minimize static build-up and discharge situations in medical, electronic, and food packaging environments, which comply with FDA Additive Regulation 21 CFR 177.

ANTI-STATIC SHEET			
PRODUCT	MATERIAL	DESCRIPTION/APPLICATIONS	SPECIFICATIONS
R607	PETG	Internal anti-stat PETG <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize static build-up/discharge	Clear and impact resistant Surface resistivity $10^{10} \Omega$ Roll stock 0.010–0.040"
R608	PETG	Topical anti-stat PETG <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize static build-up/discharge and clarity needs to be maintained	Clear and impact resistant Surface resistivity $10^8$ – $10^{10} \Omega$ Roll stock 0.010–0.040"
R619	APET	Internal anti-stat APET <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize stat build-up/discharge	Contact clear and impact resistant Surface resistivity approx. $10^{10} \Omega$
R620	rPET	Internal anti-stat rPET <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize static build-up/discharge	Clear and impact resistant Surface resistivity $10^{10} \Omega$
R621	APET	Topical anti-stat APET <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize static build-up/discharge and clarity needs to be maintained	Clear and impact resistant Surface resistivity $10^8$ – $10^{10} \Omega$
R622	rPET	Topical anti-stat rPET <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize static build-up/discharge and clarity needs to be maintained	Clear and impact resistant Surface resistivity $10^8$ – $10^{10} \Omega$
R637	HIPS	Internal anti-stat HIPS <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize static build-up/discharge	Surface resistivity $10^{10} \Omega$
R638	HIPS	Topical anti-stat HIPS <b>Applications:</b> Medical, electronic and food packaging markets where there is a need to control/minimize static build-up/ discharge	Surface resistivity $10^8$ – $10^{10} \Omega$

## Applications for a wide variety of industries

### AUTOMOTIVE



#### Automotive

For EV battery packs and for transport dunnage of auto parts.

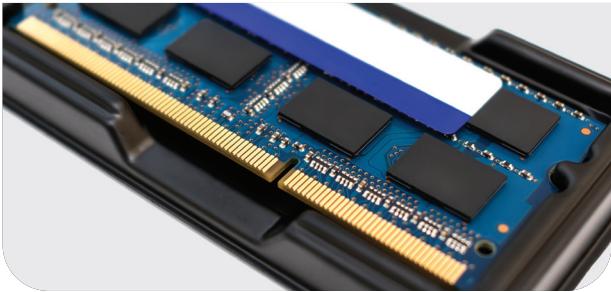
### ENERGY STORAGE



#### Energy Storage

For energy storage applications such as housings, electrodes, and dipolar plates.

### PACKAGING



#### Packaging

For food, medical, electric, and electronic packaging to avoid dust.

### BUILDING AND CONSTRUCTION



#### Building and Construction

Available in a wide range of chemistries, these materials can be used for temporary floor materials used during product assembly.

### MEDICAL



#### Medical

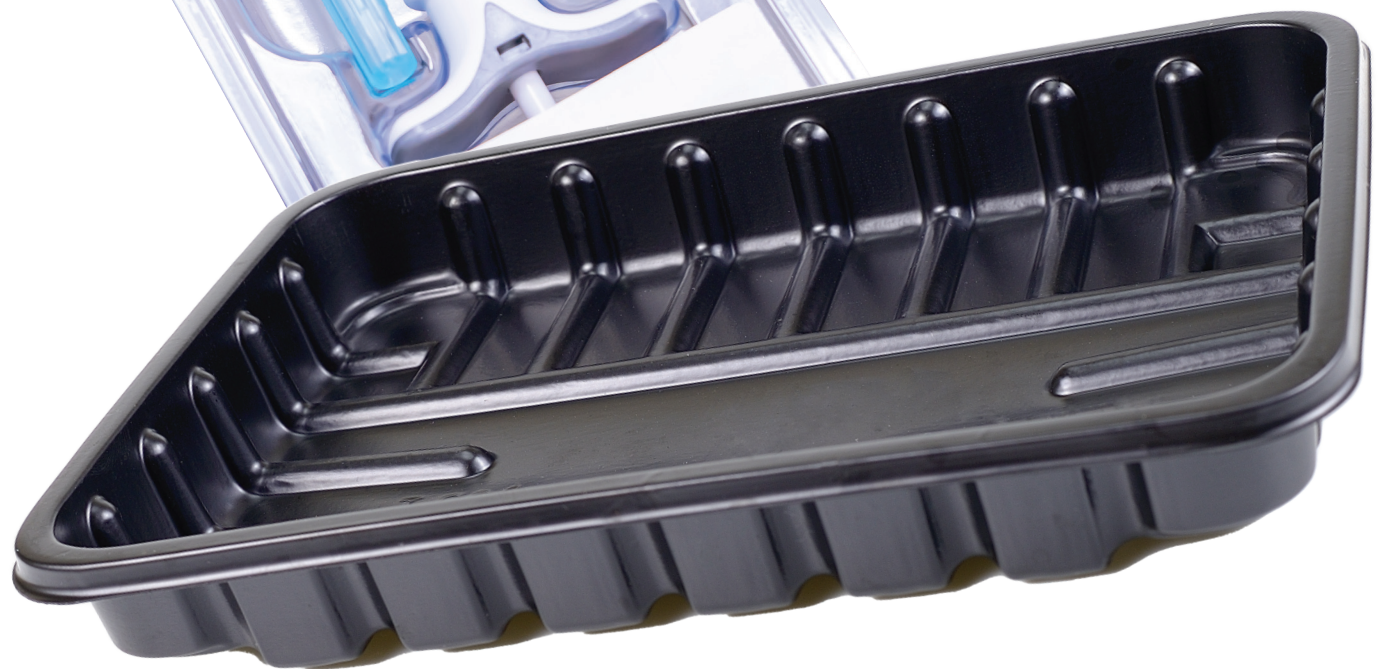
Protect sensitive electronic devices during manufacture, assembly, storage, and use



Conductive Products



## Anti-Stat Products



Call 800-677-4338 or email [marketing@spartech.com](mailto:marketing@spartech.com) to order these products.

## DEFINITIONS

(These are general industrial definitions.)

### INSULATIVE

Regular plastics are insulative, with surface resistivity at  $10^{12}$  Ohms or higher.

### ANTI-STAT

These products have a low level of conductance, with surface resistivity around  $10^9$ - $10^{11}$  Ohms. This helps to avoid electric shock and dust accumulation.

### ESD

Electrostatic dissipative/discharge (ESD) products have surface resistivity around  $10^6$ - $10^9$  Ohms. ESD is sometimes used interchangeably with anti-stat.

### CONDUCTIVE

These plastics have surface resistivity at  $10^5$  Ohms or lower.

## TESTING METHODS AND PROTOCOLS

### ASTM

ASTM D257 Surface and volume resistivity of insulating and ESD materials

ASTM D991 Volume resistivity of conductive and anti-stat materials

ASTM D4496 Surface and volume resistivity of conductive materials

### ESD

ESD S20.20 ESD control program

ESD S541 Packaging materials for ESD sensitive items

ESD STM 11.11 Testing method of surface resistivity of ESD planar materials

ESD STM 11.12 Testing method of volume resistivity of ESD planar materials

ESD STM 11.13 Two-point testing method of resistivity on the surface



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**[www.spartech.com](http://www.spartech.com)**

We are a leading thermoplastic solutions manufacturer that leverages our knowledge of materials, processing, and application development to deliver the highest level of value to our customers.