



# EST™ P Paper

## Product Data Sheet

### Product Description

EST P Paper is a composite product commonly used in lithium ion pack level protection.

EST P Paper is developed with Superwool® bulk fibres and flame retardant heat sealing film produced by specific lamination and sealing processes.

The flame retardant heat sealing film provides good mechanical strength and protects the battery and people from fibres and dust. It has excellent resistance to water absorption while using out side the battery lid. The product is also designed to protect the battery from external fire and heat.

Superwool fibres provide stability and resistance to chemical attack. Exceptions include hydrofluoric acid, phosphoric acid and strong alkalis (i.e. NaOH, KOH). Superwool is unaffected by incidental spills of oil or water. Thermal and physical properties are restored after drying.

### Benefits

- High resistance to water absorption
- Meets UL94 V-0 requirements
- Excellent surface finish
- Lightweight
- Adhesive capable design

### Applications

- Pack level protection of Lithium Ion batteries

### Environmental & Health Safety

Superwool low biopersistent fibres manufactured by Morgan Advanced Materials are not classified as carcinogenic by IARC or under any national regulations on a global basis. They have no requirements for warning labels under GHS (Globally Harmonised System for the classification and labelling of chemicals).

In Europe, Superwool fibres meet the requirements specified under Note Q of European Regulation EC/1272/2008 (on Classification, Labelling and Packaging of substances and mixtures). All Morgan Advanced Materials Superwool low biopersistent fibre products are therefore exonerated from classification and labelling as hazardous in Europe.

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EST P Paper	
Colour	White
Classification Temperature, °C (°F)	1100 - 1300 (2010 - 2370)
Density, kg/m <sup>3</sup> (pcf)	272 - 352 (17 - 22)
Loss of ignition, %	≤8.0
Dielectric Breakdown, kΩ, kV/mm	>3
Thickness, mm (in)	1 - 6 (0.04 - 0.24)
<b>UL94 Rating</b>	UL94V-0
<b>Thermal Conductivity, W/m·K (BTU·in/hr·ft<sup>2</sup>·°F), Descending</b>	
200°C (392°F)	0.05 (0.35)
400°C (752°F)	0.07 (0.49)
600°C (1112°F)	0.11 (0.76)
800°C (1472°F)	0.16 (1.11)
1000°C (1832°F)	0.23 (1.60)

Whilst the values and application information in this datasheet are typical, they are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials - Thermal Ceramics.