



EST™ E Paper

Product Data Sheet

Product Description

The EST E Paper is an endothermic paper commonly used in Lithium Ion cell-cell applications.

EST E Paper has been specifically developed to manage heat during a battery thermal runaway via three separate mechanisms:

1. Thermal Energy Absorption: Heat absorption to reduce the amount of thermal energy.
2. Hot Gas Evacuation: Decomposition products continue to propel hot gases out of the housing after the event, thereby reducing energy available for heating.
3. Thermal Resistance: Slows the rate of thermal transmission from the event area. This allows time for heat to conduct to entire apparatus, and gives time for heat to be evacuated by decomposition of gases (above).

Benefits

- Multiple mechanisms for addressing thermal runaway:
 - Thermal energy absorption
 - Hot gas evacuation
 - Thermal resistance
- Excellent surface finish
- Adhesive capable design

Applications

- Lithium ion Cell-Cell protection

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 E Paper	
Colour	White / Off-White
Classification Temperature, °C (°F)	1100 - 1300 (2010 - 2370)
Density, kg/m ³ (pcf)	450 (28)
Tensile strength, kPa (psi)	>350 (>50)
Loss of ignition, %	28 - 34
Dielectric Breakdown, kΩ, kV/mm	>2
Energy Absorption, J/g	804
Thickness, mm (in)	0.8 - 6 (0.03 - 0.24)
UL94 Rating	All thicknesses UL94V-0
Thermal Conductivity, W/m·K (BTU·in/hr·ft²·°F), Descending	
200°C (392°F)	0.06 (0.42)
400°C (752°F)	0.09 (0.62)
600°C (1112°F)	0.13 (0.88)
800°C (1472°F)	0.16 (1.10)
1000°C (1832°F)	0.20 (1.39)

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.