

# E-Shield 6410

## Electrically Conductive Coating

Typical Properties			
Property	Unit	Value	Test Method
Color / Component		Black	Visual
Viscosity at 25°C	cP.s	80 - 320	ASTM D2196
Density	Gram /cc	1.2 to 1.3	ASTM D792
Carrier		Water	
PH value		8 to 10	
Solid Content	Weight %	> 50%	TGA
Property as Cured			
Color		Black	Visual
Hardness	Shore D	> 80	ASTM D2240
Sheet Resistance (1 mil thick film)	Ohm / in <sup>2</sup>	< 50	ASTM D257
Shielding Capacity (1 to 2 mil thick coating)	dB @ < 500 MHz	20 to 50	IEEE Standard
Coefficient of Thermal Expansion	ppm/C	< 120	IPC-TM-650
Thermal Conductivity	W/m-K	> 1.5	ASTM D5470
Temperature Stability	°C	- 80 to 500	TGA
Cure Profile (As 1 mil thick film)			
Dry to touch at 25°C	Min	15 to 30	DSC
Fully Cure at 25°C	Hour	6 to 8	DSC
Fully Cure at 85°C	Min	15	DSC
Shelf Life (In originally sealed container)	Month	12	UA-ITM

These figures are only intended as a guide and should not be used in preparing specifications.

### Processing Instruction

E-Shield 6410 is water-based coating with inorganic binder. It can be cured at room temperature after drying out the water. It cures to dry-to-touch after ~30 minutes, but a full cure will need about 6 to 8 hours to complete. The curing process can be accelerated by heating up at temperature from 65 to 85°C for about 15 min.

For the package in a container, to ensure homogeneity of the material, the components must be stirred thoroughly before they are processed in order to uniformly disperse the filler that might have settled during storage.

### Storage

E-Shield 6410 has a shelf life of at least 12 months when stored at ambient condition in the originally sealed container. The 'Best use before end' date of each batch appears on the product label. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

### Safety information

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from United Adhesives, Inc.

### Characteristics

E-Shield 6410 is a water-based, ready-to-use one part coating compound filled with graphite. After cure at ambient or elevated temperatures, it forms excellent conductive coating film with superior bonding to various glasses, ceramics, metals, and plastics. It is ideal for EMI / RFI shielding, conductive grounding, controlling electrostatic discharge, and surface protection. The cured material has extremely high temperature stability and strong mechanical resistance. E-Shield 6410 can be applied by painting, brushing, dipping, spin-coating, or spraying.

### Special Features and Benefits

- High electrical conductivity
- Strong mechanical resistant
- Effective EMI / RFI shielding
- High temperature stability

### Typical Applications

- Conductive coating
- EMI / RFI shielding
- Shielding for aerospace electronics
- Grounding connection
- Control electrostatic discharge
- Protective coating

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The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose. For technical, quality, or product safety questions, please contact directly to United Adhesives Inc.