

# 5036 Heat Seal/Encapsulant

Polymer Thick Film Composition

All values reported here are results of experiments in our laboratories intended to illustrate product performance potential with a given experimental design. They are not intended to represent the product's specifications.

## Product Description

Polymeric composition 5036 is solvent-based, screen-printable ink used for heat-sealing circuitry and encapsulant application. It offers the advantages of rapid-curing while maintaining adhesion to both polyester and/or conductors. Heat sealing conditions will vary depending on equipment used. A general recommendation would be to cure as directed below, followed by heat-sealing at 120-125°C.

## Product Benefits

- Solvent based protection layer, can be used as barrier for graphic ink overprint

## Processing

- **Screen Printing Equipment**  
Semiautomatic and manual
- **Substrates**  
Polyester, polyimide, epoxy glass
- **Ink Residence Time on Screen**  
> 2 hours
- **Screen Types**  
Stainless steel, Polyester
- **Cure Conditions**  
120° -130°C/5 minute
- **Typical Thickness (after cure) Printed with 200-325-mesh stainless steel screen**  
0.5 - 1.0 mil
- **Clean-up Solvent**

## Storage and Shelf Life

DuPont thick film polymeric compositions should be stored at ambient temperatures. The shelf life of material in unopened containers is a minimum of six months from date of shipment. Some settling of solids may occur, so compositions should be stirred thoroughly prior to use.

Table 1 Typical Physical Properties on Polyester Film	
Adhesion Crosshatch (ASTM D2259-78) Dielectric to Polyester Scotch Tape #600 Conductor to Dielectric	No Transfer (5) B No transfer
Abrasion Resistance, Pencil Hardness (ASTM D3363-74)	≥ 1H
Operating Use Temperature (°C) (dependent on conductor)	≤ 90
Flexibility (180° crease over 5007)	No opens
Breakdown Voltage (ASTM D150)	500 V/mil DC
Dielectric Constant (ASTM D150)	< 5 at 1kHz
Insulation Resistance	>10 G½sq/mil

Table 2 Composition Properties	
Viscosity (Pa.s) (Brookfield RVT, 10 rpm, #14 spindle, 25°C)	25 - 45
Solids (150°C) (%)	28 - 30
Thinner	3610
Density, g/cm <sup>3</sup>	1.08
Color	Colorless

## Dry

Dry and cure in a well ventilated oven or conveyor dryer where the exhaust meets environmental regulations. DO NOT OVERDRY. See Safety & Handling section for additional information

## Safety and Handling

DuPont thick film products are intended for industrial use by trained personnel. These products contain organic and inorganic ingredients. It is important for workers to avoid overexposure to chemicals contained in these products or that might be become available when processing them. Overexposure to other materials used in the operation should also be avoided, for example, cleaning solvents and degreasing fluids.

Well-designed area and personal air sampling/analysis can show if exposures are within required and recommended limits. Properly designed engineering controls, such as local ventilation and process enclosures, are effective in limiting employee exposure and to avoid the creation of hazardous conditions (e.g. forming an explosive vapor concentration). Engineering controls and procedures must comply with all applicable federal, state and local safety, health and environmental laws and regulations.

The following additional precautions should be taken when handling these products:

- Read the Material Safety Data Sheet (MSDS) and product labels before using the products;
- Use appropriate personal protective equipment (PPE) and practice good industrial hygiene. DO NOT INGEST! DANGEROUS IF SWALLOWED!
- Keep product container closed when not in use to prevent solvent evaporation and spilling hazards;
- If contact with skin occurs, wash affected area immediately with soap and water
- Avoid prolonged breathing of vapors and dusts/particulates. Keep exposure levels within the required or recommended limits. Always use sufficient ventilation as noted above

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**Caution:** Do Not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102

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