

# CUSTOM LOW-PRESSURE INJECTION OVERMOLDING (LPIO) FOR PCBs & ELECTRONIC COMPONENTS

Environmental protection against dust, oil, chemicals, extreme temperature fluctuations, and hostile jostling are easily handled by our Low-Pressure Injection Overmolding system. This process seals any part with molten thermoplastic polyamide hotmelt that tenaciously adheres to most substrates including PVC wires and PCBs, and will work with virtually any surface mounted component. In most production situations, LPIO is a superior low-cost alternative that can be used to encapsulate electrical/electronic components and PCB's vs. epoxy or urethane fillers or conformal coating (painting or spraying of protective chemicals onto the component surface).

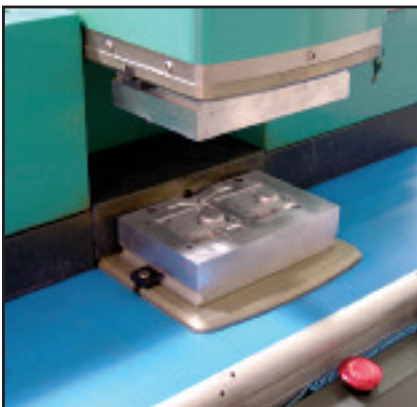
Ideal for temperature-sensitive and complex shaped parts, LPIO provides a level of protection virtually impervious to environmental stresses. LPIO is a cost effective technique involving few assembly requirements. LPIO is safe and easy to implement with pressures as low as 20 psi, eliminating the possibility of component damage associated with traditional high-pressure injection molding.

## FEATURES & BENEFITS

- Seals and protects components
- Environmentally friendly
- Eliminates epoxy potting
- Short cure times
- Ideal for use on fragile components
- Resists most chemicals and fluids
- The most efficient and cost effective way to protect circuit boards in any environment

## PROPERTIES OF MATERIAL

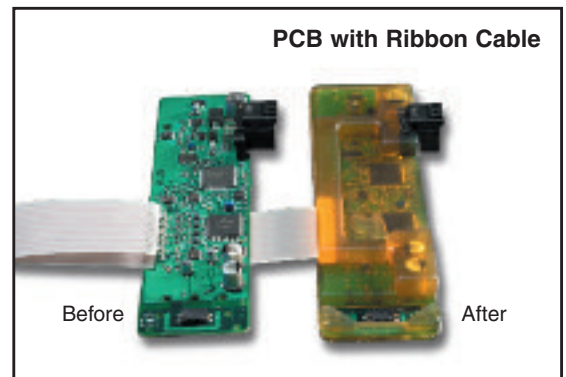
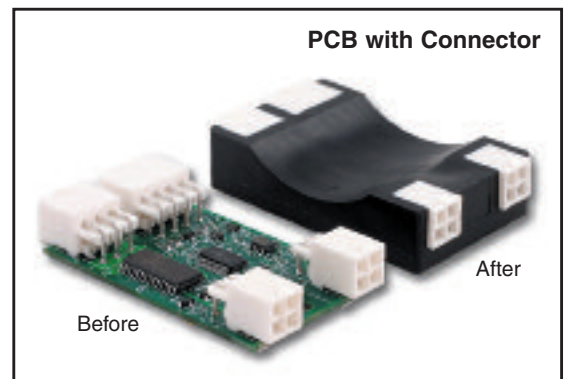
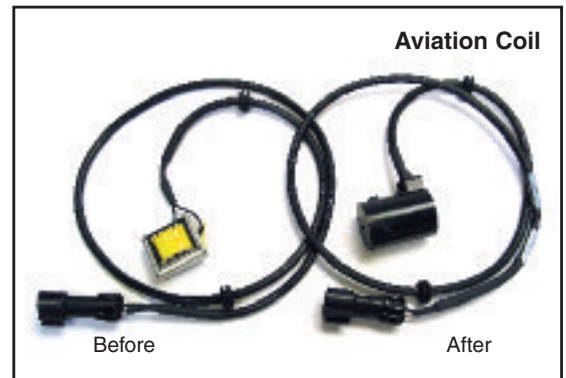
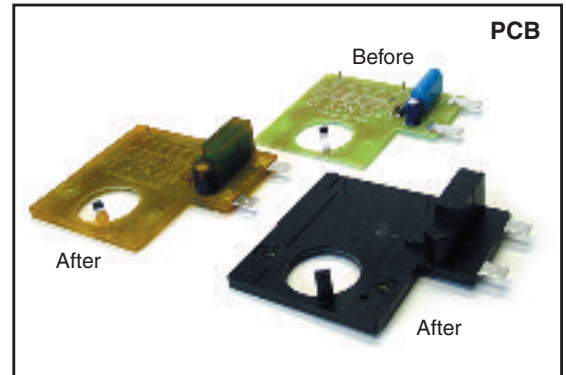
	Typical Values		Typical Values
Softening Point		Water Absorption ASTM D 570	
°C, Ring & Ball, ASTM E 128	.....176	after 24 hours, %	.....6
Viscosity		Flash Point °C, COC	.....271
LVT Brookfield @220 °C	.....2500	Dielectric Constant (1MHz)	.....3.35
Color	.....Black or Amber	Dielectric Strength (V/mil)	.....600
Hardness (Shore A)	.....90	Volume Resistivity (Ωcm)	.....2.15E+12
Tensile Strength (psi) ASTM D 1708	.....870	Thermal Conductivity (W/M. °K)	
Elongation (%)	.....500	@ 23°C	.....~0.2
Glass Transition Temperature (°C)	...-40	@ 180°C	.....~0.6
		UL 94 flammability test:	.....V0



Photograph provided by TEMS/ND Industries®

Upper and lower parts of aluminum/steel mold used for low-pressure injection overmolding.

## Typical Examples



**APM HEXSEAL®**  
**SEALING SPECIALISTS**