PRODUCT SELECTION
OF
ADHESIVES/SEALANTS – ENCPASULANTS – COATINGS
TOOLING RESINS – ELASTOMERS

Choosing the correct material is critical to final product success. Due to the large number of available products, people often do not focus on their primary material needs. Product selection can be easier if specific questions, like those below, are asked during the product design stage.

The purpose of the following worksheet is to prioritize the most important properties and to assist in the selection of the product most likely to meet the application requirements.

Application

1. What is the application?
2. What is the substrate?
3. If replacing a product currently in use: what properties need to be changed and which are to be retained?
4. What will be the max/min temperatures the product will encounter during actual use?

Processing

1. What is the maximum temperature and time allowed for curing?
2. What are the target cure conditions?
3. How is the material to be handled and processed?
4. What viscosity range is needed?
5. How will the material be packaged and dispensed?
6. Are there any restrictions on the type of composition of materials that may be used?

Cured Property Value Requirements

1. Thermal conductivity
2. Electrical insulation/conductivity
3. Strength: Adhesives – tensile lab shear or peal strength
   Coatings – cross hatch adhesion
   Encapsulants – tensile load, compressive load, flexural load
   Tooling Resins & Elastomers – tensile strength, % elongation, tear strength
4. Environmental stress related properties: impact strength, thermal cycle, thermal shock, hardness, and linear shrinkage.
5. Other properties: outgassing, viscosity, water absorption, heat and chemical resistance, specific gravity, glass transition temperature (Tg), and coefficient of thermal expansion (CTE)

Name	Company	
Phone	Address	
Fax		
Application Description		
Substrates	Grams per Part	Part/Yr.
Dimensions	Targeted Cost per Part	

PROCESSING

Viscosity	Dispensing Method/Equipment	
Cure Conditions: Room Temp	Heat _____°C	UV Cure
Cure Time (Max)	Working Life/Pot Life	Mix Ratio A/B

CURED PROPERTY VALUES (Rank Importance)

Electrical Properties

Dielectric Constant	Resistivity: ohm-cm	Arc Resistance
Dielectric Strength	Ohms/sq	Dissipation Factor

Strength Properties – Adhesives & Sealants

Tensile Lap Shear	Peel Strength	Push/Die Shear

Coatings

Cross Hatch Adhesion		

Encapsulants

Tensile Strength	Compressive Strength	Flexural Strength
Tensile Elongation		

Tooling Resins & Elastomers

Tensile Strength	Tear Strength	Flexural Strength
% Elongation	Heat Distortion Temp.	

Other Properties

Service Temp (min/max)	Thermal Conductivity	Hardness
CTE	Thermal Shock	Thermal Cycle
Glass Transition Temp (Tg)	Impact Strength	Linear Shrinkage
Flexibility	Flammability	Specifications (MIL, UL)
Color	Specific Gravity (SpG)	Chemical Resistance
Machinability	Outgassing: % TML	Water Absorption
Reworkability	% CVCM	Ionics