

# 3M™ Scotchcast™ Liquid Resins

## Troubleshooting

This troubleshooting chart has been developed to assist 3M customers in identifying and solving some possible problems that can occur when using 3M™ Scotchcast™ Liquid Resins.

Should you need further assistance, contact your local 3M Sales Representative or area electrical distributor.

Cause and Solution	Problem																						
	Uncured extensive curing	Thermoplastic but becomes liquid, soft or tacky even after curing	Charring or Discoloring in center	Oozing and so on	Cracking down or subsequent thermal shock	Poor Adhesion lead wires and so on	Crazing	Distortion	Striking remove	Soft Spots cured products	Blemishes rough or pitted	Voids in the casting	Resin remains liquid, soft or tacky even after curing	Casting appears normal at room temperature but becomes liquid or tacky at elevated temperatures	Resin appears burned, especially around terminals, lugs	Fissures develop in casting either during cure, cool-down or subsequent thermal shock	Resin releases from components, terminals	Casting warps or distorts from mold shape	All or part of mold difficult to remove	Soft areas in fully-cured products	Surface rough or pitted	Bubbles in the casting	
<b>Contamination</b> Moisture/Keep covered Dirt/Clean parts and keep them covered Excess mold release/Use sparingly Oxidized surfaces/Remove oxide Incompatible insulation or components/ Change insulation																							
<b>Rough mold surface/Polish mold</b>																							
<b>Undercuts in mold/Remove undercuts</b> <b>Insufficient mold release/Use more mold release</b> <b>Inadequate mold release/Use different mold release</b> <b>Permanent-type release worn away/Resurface mold</b> <b>Mold not broken in/Use mold</b>																							
<b>Insufficient vacuum/Adjust vacuum</b> <b>Resin viscosity too high/Select resin with lower viscosity or warm resin to reduce viscosity</b> <b>Component design/Check design for undercuts</b>																							
<b>Difficult-to-bond-to surface (e.g., plastics)/Evaluate Scotchcast primers; "rough up" surface</b> <b>Nonstick surface (PTFE, etc.)/Change materials</b>																							
<b>Incorrect mix ratio/Check equipment and procedures, must be within ± 2%</b> <b>Insufficient mixing/Having proportioned parts A and B correctly, mix thoroughly</b>																							
<b>Resin not fully cured/Check oven temperature. Is resin at cure temperature at onset of timed cure cycle?</b>																							
<b>Wrong resin choice/May need more flexible system or a filled system</b>																							
<b>Poor component or mold design/Change design</b>																							
<b>Cure temperature too high/Lower temperature</b> <b>Temperature reached as a result of exotherm/Check exotherm. Use smaller mass of resin</b>																							
<b>Excessive shrinkage/Filled resins exhibit less shrinkage and should be considered if this problem persists</b>																							

 Indicates cause and effect