

## 3M™ Heat Resistive Polyimide Process Tapes Product Selection Guide



3M™ Heat Resistive Polyimide Tapes feature thermally cross-linkable acrylic adhesives on heat resistive polyimide backings. This provides good initial adhesion combined with less adhesion build-up after high temperature molding or reflow processes, as well as clean removal performance. These tapes are for masking, protection and carrier applications in semiconductor manufacturing.

3M™ Heat Resistive Polyimide Process Tapes									
Product Number	7418F	7418E	7421	7418S	7418S-22	7416Y	7414	7414-5	7414L-5
<b>Key Performance Features</b>	Clean removal after reflow processes. Strong adhesion during heat process on molding, Polyamide or LCP materials with low surface energy.	Clean removal after reflow processes. Strong adhesion during heat process on molding or LCP materials with low surface energy. Electrostatic discharge (ESD) properties on the polyimide backing layer to avoid chip toss off issue.	Clean and easy removal after molding or die embedding processes under high temperature. Good adhesion during high temperature embedding processes to avoid die shifting.	Clean removal after reflow processes. Strong adhesion during heat process on molding or LCP surfaces with low surface energy.	Clean removal after reflow processes. Strong adhesion during heat process on molding or LCP surfaces with low surface energy.	Clean removal after molding processes. Reduced adhesion after heat processes for easy removal.	Clean removal after reflow processes. Good adhesion during heat process on molding or glass surfaces.	Clean removal after reflow processes. Good adhesion during heat process on molding or glass surfaces.	Clean removal after reflow processes. Good adhesion during heat process on molding or glass surfaces.
<b>Typical Application</b>	Masking	Masking	Molding (Embedded Die in Package, Leadframe)	Masking	Masking	Molding (leadframe)	Masking	Masking	Masking
<b>Backing</b>	Polyimide	Polyimide	Polyimide	Polyimide	Polyimide	Polyimide	Polyimide	Polyimide	Polyimide
<b>Adhesive</b>	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic	Acrylic
<b>Primary Liner</b>	Polyester (Silicone PET)	Polyester (Silicone PET)	Polyester (Silicone PET)	Polyester (Silicone PET)	Polyester (Silicone PET)	Polyester (Silicone PET)	None	None	Polyester (Non-Silicone PET)
<b>Temperature Range</b>	-40°C to 260°C	-40°C to 260°C	-40°C to 260°C	-40°C to 260°C	-40°C to 260°C	-40°C to 260°C	-40°C to 260°C	-40°C to 260°C	-40°C to 260°C
<b>Adhesion to Stainless, 23°C/30min</b>	1.6 N/cm	1.6 N/cm	0.1 N/cm	0.8 N/cm	1.1 N/cm	0.7 N/cm	0.5 N/cm	0.3 N/cm	0.3 N/cm
<b>Adhesion to Stainless, 210°C/60min</b>	2.1 N/cm	2.1 N/cm	0.3 N/cm	1.8 N/cm	2.0 N/cm	0.3 N/cm	1.2 N/cm	1.2 N/cm	1.2 N/cm
<b>Adhesion to Stainless, 260°C/10min</b>	1.7 N/cm	1.7 N/cm	0.3 N/cm	1.4 N/cm	1.6 N/cm	0.2 N/cm	1.1 N/cm	1.2 N/cm	1.2 N/cm
<b>Tensile Strength at Break</b>	280 MPa	280 MPa	280 MPa	280 MPa	280 MPa	280 MPa	280 MPa	280 MPa	280 MPa
<b>Adhesive Thickness</b>	22 um	22 um	6 um	17 um	22 um	5 um	22 um	5 um	5 um
<b>Total Tape Thickness without Liner</b>	47 um	47 um	31 um	42 um	47 um	30 um	47 um	30 um	30 um
<b>Total Tape Thickness</b>	85 um	85 um	69 um	80 um	85 um	68 um	47 um	30 um	80 um
<b>Electrostatic Discharge (ESD)</b>	None	1x10 <sup>9</sup> Ω/sq. (Backing side)	None	None	None	None	None	None	None

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