

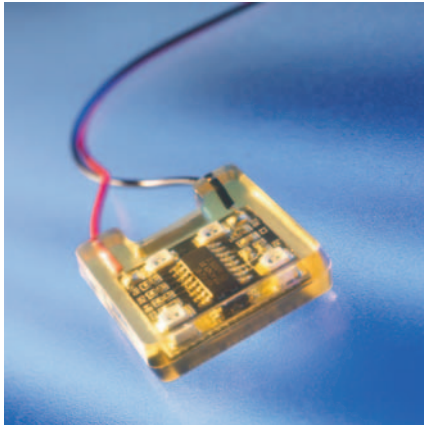
Macromelt® Low Pressure Molding

The Macromelt® line of high performance thermoplastic polyamides is specially designed to meet all your molding process requirements.



The Macromelt® products provide excellent sealing adhesion, and exceptional temperature and solvent resistance. The simplicity of these materials allows for minimal equipment cost. The low viscosity of the resin correlates to low injection pressure that will not damage delicate electronic surface mount components.

Low pressure molding is a viable solution for production issues associated with traditional high pressure injection molding over delicate electronics and circuit boards. The polyamide hot melt adhesive material may actually be used to eliminate traditional housings and covers used in potting and laser welding. The one component materials cure by cooling, providing a finished component in just seconds.



The low viscosity of the molten Macromelt® hot melt adhesive allows for application pressures as low as 1.8 bar (25 PSI). With a short cycle time of 15 to 45 seconds, injection molding results in higher production rates when compared to generic 24 hour cure for two component urethane or epoxy potting operations.

Advantages

- Water-tight encapsulation
- Fast cycle times (15-45 seconds)
- Non-toxic, single component, UL 94-V0 approved
- Effective strain relief

Applications

- Automotive and industrial sensors
- Hall effect sensors
- PCB protection
- Electronics modules
- Connectors
- Strain Relief
- Switches
- Grommets

Macromelt® Hot Melt Adhesives

Product	Description/Application	Color	Performance Temperature	Shore A Hardness	Softening Point
OM633™ OM638™	Moldable polyamide with service temperature up to 125°C such as in an automotive firewall.	Amber Black	-40°C to 125°C	90	157 ± 5°C
OM641™ OM646™	Moldable polyamide where strength and hardness are needed such as in memory sticks and computer connectors.	Amber Black	-40°C to 125°C	92	175 ± 5°C
OM652™ OM657™	Moldable polyamide where excellent adhesion and cold temperature flexibility are important such as in an automotive exterior. Also used extensively in white goods.	Amber Black	-40°C to 100°C	77	175 ± 5°C
OM673™ OM678™	Moldable polyamide with good adhesion for higher temperature applications such as in an automotive under-hood.	Amber Black	-40°C to 140°C	88	187 ± 5°C
OM681™* OM686™*	Moldable polyamide for high temperature applications such as in an automotive under-hood.	Amber Black	-40°C to 150°C	79	195 ± 5°C
OM682™* OM687™*	Moldable polyamide for the most demanding high humidity applications such as on the inside of an automobile tire. Formulated for very low water vapor transmission.	Amber Black	-40°C to 140°C	88	188 ± 5°C

* Note: Not Sold in Europe.

Macromelt® Low Pressure Molding

Product Properties

Adhesion Property	Standard	Macromelt® OM633™/638™	Macromelt® OM641™/646™	Macromelt® OM652™/657™	Macromelt® OM673™/678™	Macromelt® OM681™/686™	Macromelt® OM682™/687™
Color		Amber/Black	Amber/Black	Amber/Black	Amber/Black	Amber/Black	Amber/Black
Cold Flexibility	°C	-40°C	-40°C	-50°C	-40°C	-40°C	-40°C
Flammability Rating		UL 94-V0	UL 94-V0	UL 94-V0	UL 94-V0	UL 94-V0	UL 94-V0
Glass Transition Temperature	°C	-36°C	-35°C	45°C	-40°C	-40°C	-40°C
Injection Temperature	°C	200-240°C	200-240°C	180-230°C	200-240°C	210-240°C	200-240°C
Performance Temperature	°C	-40 to 125°C	-40 to 125°C	-40 to 100°C	-40 to 140°C	-40 to 150°C	-40 to 140°C
Softening Point	°C	175°C ± 5°C	175°C ± 5°C	157°C ± 5°C	187°C ± 5°C	195°C ± 5°C	188°C ± 5°C
Thermal Expansion Coefficient		5E -04	5E -04	5E -04	5E -04	5E -04	5E -04
Mechanical							
Density		0.98	0.98	0.98	0.98	0.98	0.98
Elongation at Rupture	%	400	800	400	500	400	500
Shore-A-Hardness		90	92	77	88	79	88
Shore-D-Hardness		56	59	41	51	57	57
Tensile Strength at Rupture	N/mm ²	4.5	11	2.7	5.7	8.8	5
Electrical Properties							
Dielectric Constant	1kHz	4.5/4.7	5.1/5.5	6.2/6.3	4.9/4.9	5.4/5.5	5.3/5.5
Dielectric Strength 5.3/5.5	kV/mm	24/19	25/22	14/15	20/20	22/21	18/16
Viscosity @ 210°C	cps	3,500	4,500	3,900	3,400	4,500	3,800
Volume Resistivity	Ω cm	1.00E+13	1.00E+14	1.00E+13	1.00E+13	1.00E+13	1.00E+14

Adhesion

Substrate	Treatment	Macromelt® OM633™/638™	Macromelt® OM641™/646™	Macromelt® OM652™/657™	Macromelt® OM673™/678™	Macromelt® OM681™/686™	Macromelt® OM682™/687™
ABS	As received	++	+	+++	+	+	++
PA 6,6	As received	++	+	++++	+	+	++
PBT	As received	+	+	+++	+	+	+
PC	As received	++	+	+++	+	+	++
PE (crosslinked)	With corona	+++	++	+++	+++	++	+++
PE (crosslinked)	Without corona	+	+	++	+	+	+
PEI	As received	+++	++	+++	++	++	+++
PES	As received	+++	++	+++	++	++	+++
PUR	As received	+++	++	+++	++	++	+++
PVC	As received	+++	++	++++	+++	++	+++
Steel	Pre-heated	++	++	+++	+++	++	++
Steel	Room temperature	+	+	+	+	+	+

Adhesion/resistance: ++++ very good +++ good ++ satisfactory + adequate

Information provided herein is based upon our practical knowledge and experience. Due to different materials used as well as to varying working conditions which are beyond our control we strictly recommend to carry out intensive trials as well as consultation of our technical personnel. Any warranty and/or liability shall not be derived from above information.

Specific data on fluid resistance and adhesion to various substrates is available at electronics.henkel.com.