Adhesive Families

Adhesive families have been color coded to make cross referencing between charts easier.

100 High Temperature Acrylic

- Up to 450°F short-term heat resistance and excellent solvent resistance.
- High peel strength compared to other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.
- Exhibits low outgassing characteristics.

100MP High Performance Acrylic

- Up to 500°F short-term heat resistance and outstanding solvent resistance.
- Higher peel strength than most other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.

100HT Ultra High Temperature Acrylic

- Up to 550°F short-term heat resistance and outstanding solvent resistance.
- Higher peel strength than most other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.

200MP High Performance Acrylic

- Up to 400°F short-term heat resistance and excellent solvent resistance.
- Outstanding adhesion to metal and high surface energy plastics.
- Excellent shear strength to resist slippage and edge lifting.
- Short term repositionability for placement accuracy.

220 Industrial Acrylic

- Up to 350°F short-term heat resistance and good chemical resistance.
- Good shear strength and chemical resistance for general purpose industrial applications.
- Good adhesion to most metal and high surface energy plastics.

290 Low Outgassing Acrylic

- Up to 450°F short-term heat resistance.
- Exceeds most OEM specifications for outgassing and long-term performance.
- High peel strength compared to other acrylic formulations.
- Exceptional shear strength even at elevated temperatures.

300 High Strength Acrylic

- Up to 250°F short-term heat resistance.
- High initial adhesion especially to low surface energy plastics.
- Quick flowing to speed lamination of textured plastics, foams, fabrics, and coated papers.

300FR Flame Retardant

- Meets various flame retardancy standards such as UL94 V-O/2, F.A.R. 25.853, and FMVSS 302.
- Similar adhesive properties to adhesive 300 family.
- Good adhesion to a wide variety of surfaces including LSE plastics, foams, and fabrics.

300LSE Low Surface Energy Acrylic

- Up to 300°F short-term heat resistance.
- Outstanding adhesion to low surface energy plastics, powder coated paints, and lightly oiled metals.
- Good chemical and humidity resistance.

300MP High Tack Acrylic

- Up to 250°F short-term heat resistance for automotive interior applications.
- Designed especially to bond most plastics and foams.
- Economical attachment of graphics.

320 High Tenacity Acrylic

- Up to 250°F short-term heat resistance.
- High bond strength to a variety of surfaces.
- Excellent flagging resistance on small diameter surfaces.

340 High Tack Acrylic

- Up to 180°F short-term heat resistance.
- Excellent bonding to foam and other substrates.
- High tack; medium shear.

350 High Performance Acrylic

- Excellent solvent resistance and adhesion to LSE materials.
- Up to 450°F short-term heat resistance.

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

Adhesive Families

400 Acrylic Adhesive

- Good low temperature performance and peel strength on many surfaces.
- Up to 250°F short-term heat resistance.
- Excellent adhesion to uncoated papers.
- Clarity and UV resistance for window label applications.

420 Acrylic Adhesive

- Up to 450°F short-term heat resistance.
- High tack adhesive.

430 Acrylic Adhesive

- Up to 350°F short-term heat resistance.
- Lead for high temperature splicing.

550 Permanent Bond Acrylic

- Provides permanent bond strength to a wide variety of surfaces.
- Because the adhesive level neither builds nor degrades over time, it will remove cleanly from most HSE materials.

553 Low Outgassing Permanent Bond Acrylic (medium shear)

- Provides permanent bond strength to a wide variety of surfaces.
- Because the adhesive level neither builds nor degrades over time, it will remove cleanly from most HSE materials.
- Low outgassing exceeds most OEM specifications for outgassing.

563 Low Outgassing Permanent Bond Acrylic (high shear)

- Provides permanent bond strength to a wide variety of surfaces.
- Because the adhesive level neither builds nor degrades over time, it will remove cleanly from most HSE materials.

573 Permanent Low Outgassing Acrylic

- High peel strength.
- High shear strength even at 350°F temperature.
- Low outgassing, exceeds most OEM specifications for outgassing performance.

700 Series Synthetic Rubber

- Up to 200°F short-term heat resistance.
- Good adhesion to low surface energy substrates.
- For indoor and room temperature applications.

800 Series Natural Rubber

- Up to 200°F short-term heat resistance.
- Offers good adhesion to a variety of surfaces.
- For indoor and room temperature applications.

900R Miscellaneous Rubber Adhesive Group

- Excellent initial adhesion and high bond to a variety of foams.
- Utility rubber-based adhesive ideal for the foam fabricating industry.

1000 Series Repositionable Acrylic

- Good holding to many surfaces.
- Clean removal.

2000MP Optically Clear Acrylic

- Visual accuracy - light transmission > 99%, free of birefringence, refractive index of 1.47.
- High cohesive and peel strengths.
- High temperature, humidity, and UV light resistance.
- Long-term durability without yellowing, delaminating, or degrading.

Electronically Conductive

- Good initial tack.
- Non-corrosive adhesive.
- Built-in conductive fibers.
- Helps reinforce tape.
- Low electrical resistance with good conductivity.

Thermally Conductive

- High performance acrylic adhesive with highly conductive ceramic particles.
- For an extremely reliable thermal interface.
- Highly conformable.

Screen Printable Adhesive

- For selective placement of pressure sensitive adhesive using screen print technology.
- Either UV curable or water-based are available.

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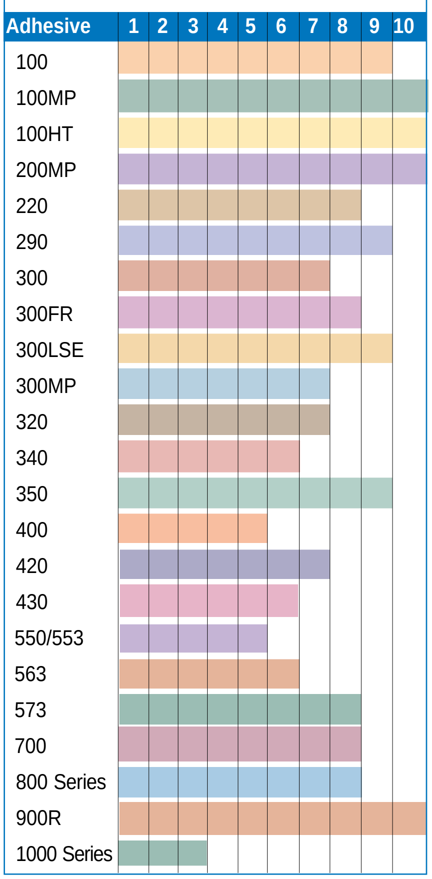
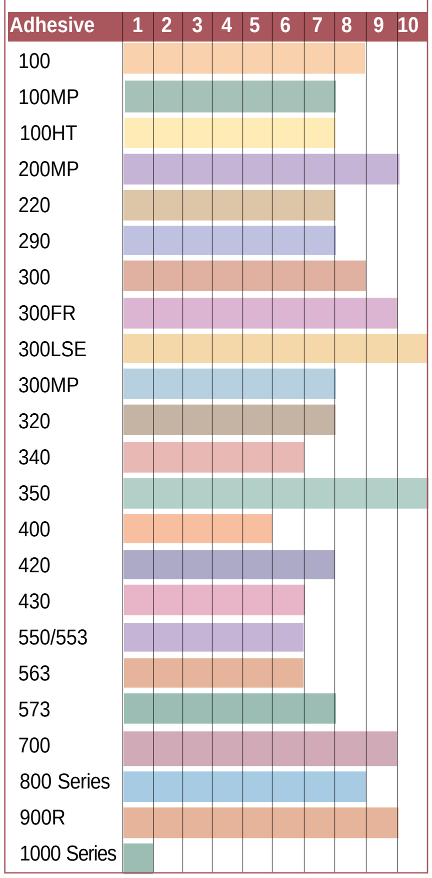
3M™ Bonding Tapes Selection Guide Based on Surface Energy

These charts are based on relative adhesion within each given surface energy category.

Metals	Surface Energy Dynes/cm
Copper	1103
Aluminum	840
Zinc	753
Tin	526
Lead	543

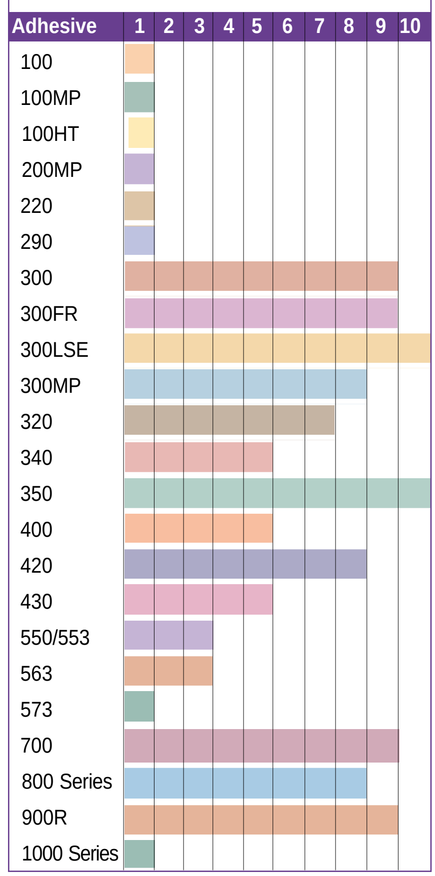


HSE Plastics	Surface Energy Dynes/cm
Kapton®	50
Phenolic	47
Nylon	46
Alkyd Enamel	45
Polyester	43
Epoxy Paint	43
Polyurethane	43
ABS	42
Polycarbonate	42
PVC	39
Noryl	38
Acrylic	38



LSE Plastics	Surface Energy Dynes/cm
PVA	37
Polystyrene	36
Acetal	36
EVA	33
Polyethylene	31
Polypropylene	29
Tedlar®	28
Teflon®	18
Powder Coatings	**

**Broad range of surface energy.



1=Lowest Performance 10=Highest Performance

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

Adhesive Properties

Adhesive Family	Adhesive Properties*				Adhesion To:			Environmental Performance Resistance To:				Temperature °F			Products
	Peel		Shear			Plastics			Ultra	Plasti-		Minimum	Service*		
	Initial	Ultimate	Room Temp.	150°F	Metal	HSE	LSE	Chemical	Violet	cizers	Humidity	Application	Low	High	
Acrylic															
#100															
High Temperature	3	9	10	10	9	8	1	9	10	5	10	50	-40	450	941, 941N, 965, 966, 4004, 4008, 4026, 4032, 4052, 4056, 4658F, 4921, 9461P, 9462P
#100MP															
High Performance	4	10	10	10	10	7	1	10	10	5	10	50	-40	500	F9460PC, F9473PC, F9469PC, 9437
#100HT															
Ultra High Temperature	4	10	10	10	10	7	1	10	10	5	10	50	-40	550	9082, 9085
#200MP															
High Performance	4	10	10	10	10	9	1	9	10	5	10	50	-40	400	467MP, 467MPF, 467MPR,468MP, 468MPR, 468MPF, 7945MP, 7952MP, 7953MP, 7953SL, 7955MP, 7956MP, 7956MWS, 7956WDL, 7957MP, 7959MP, 7961MP, 7962MP, 7964, 7965MP, 7966MWS, 7966WDL, 7968MP, 7970MP, 7972MP, 7973MP, 7974MP, 7975MP, 7976MP, 7978MP, 7986MP, 7987MP, 7991MPW, 7992MP, 7992MPW, 7993MP, 7994MP, 7995MP, 7997MP, 9045MP, 9056MP, 9057MP, 9059MP, 9061MP, 9172MP, 9172PT, 9185MP, 9492B, 9492MP, 9492MPR, 9495B. 9495BF, 9495FL, 9495MP, 9495MPF, 9598BF, 9667MP, 9668MP, 9668MPL, 9676MP
#220															
Industrial	4	8	10	9	8	7	1	8	10	4	8	50	-40	350	9502, 9502HL, 9505, 9505HL, 9552, 9553, 9553HL, 9555, 9557, 9559, 9561, 9563
Low Outgassing	3	8	10	10	9	7	1	9	10	5	10	50	-40	450	501FL, 502FL
High tack	6	7	4	1	7	9	9	6	7	3	8	50	-40	250	444, 444PC,927, 950, 950EK, 992U, 9009, 9019, 9019HL, 9428, 9458, 9459S, 9459W, 9466B, 9471,9471PC, 9472, 9653, 9671, 9672, 9673
Flame Retardant	6	7	4	1	8	9	9	6	7	3	8	50	-40	250	9372W, 9372DKW, 9375W, 9375DKW
Low Surface Energy	7	9	8	8	9	10	10	7	7	4	9	50	-40	300	8132LE, 8153LE, 9453FL, 9453LE, 9471FL, 9471LE, 9472LE, 9472FL, 9495LE, 9653LE, 9671LE, 9672LE
High Tack	6	7	8	8	7	7	8	7	7	3	9	50	-40	250	964, 6032PC, 6032PL, 6035PC, 6035PL, 6038PC, 6038PL, 7951, 9609, 9687, 9690, 9690B, 9692, 9695, 9770, 9774, 9774HL, 9784, 9786, 9786NP, 9832, 9832HL
High Tenacity	6	7	4	4	7	7	7	6	6	3	8	50	-40	250	9447
High Tack	6	7	6	5	6	6	5	8	7	4	9	50	-40	180	9456, 9824, 9828, 9828HL, 9828PC

Values: 1 – Lowest Performance 10 – Highest Performance

The rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

* Reflects lowest service temperature that bond holds and highest temperature for short periods (minutes, hours)

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

Adhesive Properties

Adhesive Family	Adhesive Properties*				Adhesion To:			Environmental Performance Resistance To:				Temperature °F			Products
	Peel		Shear			Plastics			Ultra	Plasti-		Minimum	Service*		
	Initial	Ultimate	Room Temp.	150°F	Metal	HSE	LSE	Chemical	Violet	cizers	Humidity	Application	Low	High	
Acrylic *continued*															
#350															
High Performance	7	9	8	8	9	10	10	8	7	4	9	50	-40	450	922XL, 9442, 9445, 9482PC, 9485EK, 9485PC, 9500PC, 9675, 9731
#400															
Acrylic	4	5	5	4	5	5	5	5	10	4	8	50	-60	250	415, 463, 465, 465XL, 666, 920XL, 9420, 9457, 9464, 9498, 9576, 9576B, 9576R, 9578, 9665, 9576Y
#420															
Acrylic	5	6	10	10	7	7	8	6	10	2	9	32	-40	450	F9752PC, F9755PC, 9795, 9795B, 9795BF, 9799
#430															
Acrylic	3	4	10	10	6	6	5	5	10	4	10	50	-40	350	4408, 4416, 4432, 4492, 4496, 9497, 9499
#550/553															
Permanent Bond Acrylic	5	5	5	4	5	6	3	6	6	2	8	50	-40	300	55799, 55334
Low Outgassing Permanent Bond Acrylic	6	6	6	5	6	6	3	7	7	3	8	50	-40	300	55334
Permanent Low Outgassing Acrylic	3	8	9	9	8	7	1	9	9	4	9	50	-40	350	55101, 55106
Rubber															
Synthetic Rubber	7	9	10	2	8	9	9	2	4	1	9	50	-40	200	443PC, 4085, 4462, 4466, 4492, 4496, 9443NP, 9579, 9589
Natural Rubber	9	10	6	2	8	8	8	1	1	1	1	50	-40	180	401B, 410B, 442F, 442KW, 456CR
Rubber	10	10	5	4	10	9	9	4	4	3	1	50	-40	200	9851
Other															
Repositionable Acrylic	2	3	3	3	3	1	1	2	7	3	4	50	-20	250	665, 666, 9425, 9449, 9449S, 9870, 9871

Values: 1 – Lowest Performance 10 – Highest Performance N/A – Not Available

The rankings are a general guide. Adhesives should be tested with actual components to ensure acceptable performance.

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