

Solutions that inspire your most ambitious designs.

3M[™] Electronics Bonding Solutions

Materials that stand up to the challenges of everyday life.

Mobile devices are designed to be on the go—it's in the name. Smartphones, tablets, notebook computers, wearables and headphones go everywhere with their users, and that means they need to withstand everyday bumps and shocks. And even though smart appliances, smart speakers, smart sensors, and security systems don't leave the home, they still need to be durable enough to stand up to heavy use.

Enter 3M[™] Electronics Bonding Solutions, a comprehensive portfolio offering of tapes and adhesives to help enable your most ambitious consumer electronics designs. From curved and foldable surfaces to small components, these solutions offer the right combination of properties for tough bonding applications.



3M[™] Adhesive Transfer Tapes

Adhesive Transfer Tapes (sometimes called ATT, transfer tape or unsupported tape) is made from a thin film of adhesive with a liner over the top so it can be easily handled. With no carrier for separation, these thin bonding tapes consist of a single type of adhesive, but their overall temperature resistance is not limited by the temperature resistance of the carrier. Adhesive transfer tapes are extremely conformable to irregular surfaces, and some tapes even enable curved and foldable device designs.

Design challenges:



Smartphones

Tablets /

Notebooks

FPC bonding

Device types:

Spotlight on conformability

When foldable devices or other device designs require bonding at irregular angles and surfaces, the highly conformable properties of 3M[™] Adhesive Transfer Tapes make them an ideal solution for challenging applications.



Pressure sensitive adhesive

IoT Smart Home /

Security

Release liner





/ Others

Wearables / Oth Hearables



3M[™] Adhesive Transfer Tapes

Product	Primary feature	Thickness (µm)	Color	Adhesive	180° Peel, SUS (N/mm)	180° Peel, PC (N/mm)	Static Shear @ RT (min)	Static Shear @ 70°C (min)	Tensile Strength (kPa)	Tensile Impact (J)	Other features	
9471LE	Bonding to low	58	Clear		0.8	1.2	9,258	10,000+	271	0.2	a Danadian to DD and DC	
9472LE	substrates	132	Clear	Acrylic	1.0	1.3	10,000+	10,000+	246	0.2	• Bonding to FF and FE	
467MP	Shear strength,	60	Clean	0 amrtia	0.8	0.8	10,000+	10,000+	253	0.3	Bonding to metals	
468MP	anti-lift	130	Clear	Acrylic	1.0	0.9	10,000+	10,000+	271	0.5	Bonding to high surface energy plastics	
962CR-50	Chemical	50	Olaan	Specialty	0.9	1.0	10,000+	10,000+	998	0.4		
962CR-200	resistance	200	Clear	Adhesive	1.6	1.7	10,000+	10,000+	1,600	0.4	Produced in clean room	
74911NH	Low modulus at low temperature	110	Clear	Acrylic	0.3	0.4	10,000+	10,000+	13	0.4	Produced in clean roomEasily converted	
F9460PC		58			0.4	0.7	10,000+	10,000+	279	0.4		
F9469PC		130	Clear	Acrylic	1.0	1.1	10,000+	10,000+	1,082	0.4	Up to 200°C short-term High shear strength even at high tomporature	
F9473PC	High temperature	250			1.2	1.3	10,000+	10,000+	462	0.4	ngn temperature	
9079		50		Acrylic	0.8	0.9	10,000+	10,000+	153	0.3	• Up to 260°C short-term, low outgas	
9617		50		Acrylic	0.9	1.0	10,000+	10,000+	204	0.2	 Up to 204°C short-term Fast bubble-free application 	
95005	Import register	50	Pleak	Modified	1.0	1.0	10,000+ 10,000+ 179		179	0.3		
95010	impact resistance	100	ыаск	Acrylic	1.5	1.1	8,496	4,035	280	0.5	• Comonnable	

3M[™] Double Coated Tapes

Made from two layers of pressure sensitive adhesive coated on both sides of a film carrier, 3M[™] Double Sided Tapes are easy to handle and well-suited for adhering similar materials as well as dissimilar materials that require different bonding properties. The carrier can be made of paper, plastic film, tissue or foam, and the type of carrier used gives them specialized properties including heat and impact resistance. And because they help you bond curved, foldable, or otherwise hard-to-bond surfaces, they give you the flexibility you need to make your next-generation designs a reality.

Design challenges:



Typical applications:

- **Display bonding** ►
- Battery bonding

Device types:

FPC bonding

Smartphones

- Packaging bonding

Tablets /

Notebooks



IoT Smart Home /

Security





Others Wearables / Hearables



Spotlight on die cutting

The polyester film carrier on 3M[™] Double Coated Tapes helps improve handling and dimensional stability for a smoother die cutting and lamination process.



3M[™] Double Coated Tapes

Product	Primary feature	Thickness (µm)	Color	Adhesive	Carrier Type	180° Peel, SUS (N/mm)	180° Peel, PC (N/mm)	Static Shear @ RT (min)	Static Shear @ 70°C (min)	Tensile Strength (kPa)	Tensile Impact (J)	Other features		
9492MP	Bonding to high	60	0	A 11	DET	0.8	0.5	10,000+	10,000+	281	0.2	 Up to 149°C short-term heat 		
9495MP	surface energy substrates	140	Clear	Acrylic	PEI	0.9	0.6	10,000+	10,000+	239	0.4	resistance		
9495LE		170	Clear	Acrylic	PET	1.2	1.7	10,000+	10,000+	453	0.2	Bonding to PP and PE		
93005LE		50				0.7	0.8	10,000+	10,000+	242	0.1			
93010LE	Bonding to low	100	Clear	A	DET	0.9	1.2	10,000+	10,000+	261	0.2	• Deadias to DD and DE		
93015LE	surface energy	150	Clear	Acrylic	PEI	0.9	1.2	10,000+	10,000+	202	0.2	Bonding to PP and PE		
93020LE	substrates	200				0.9	1.3	8,012	10,000+	224	0.3			
9628B		50	Plack	Aondia	DET	0.9	1.0	10,000+	10,000+	505	0.2	Bonding PP and PE		
9629B		100	DIACK	Acrylic	FEI	1.1	1.2	10,000+	10,000+	310	0.3	• Fast bonding dwell time		
9731-050	Bonding to silicone substrates	50	Clear	Acrylic / Silicone	PET	0.61	0.58 / 0.25 ²	10,000+	10,000+	104	0.2	• Up to 177°C short-term heat resistance		
GTM705P/BP		50		Acrylic		1.0	1.2	10,000+	10,000+	253	0.1			
GTM708P/BP		80	Clear Black		PET	1.1	1.5	10,000+	10,000+	273	0.2	• High static shoor		
GTM710P/BP		100				1.3	1.6	10,000+	10,000+	241	0.2			
GTM715P/BP	Good initial tack	150	Clear, Black			1.5	1.8	10,000+	10,000+	317	0.2	High static shear		
GTM720P/BP		200				2.0	2.3	10,000+	10,000+	317	0.2	Good shear holding power		
GTM725P/BP		250				2.0	2.7	10,000+	10,000+	349	0.2			
55256P/BP		50	Clear Plack	Aondia	DET	0.9	1.0	10,000+	10,000+	197	0.2			
55261P/BP		100	Clear, Dlack	Acrylic	FEI	0.8	1.3	10,000+	10,000+	173	0.3			
93420		200		Acrylic	Specialty Core	0.9	1.1	10,000+	10,000+	450	0.3			
93425		250	Black			1.5	1.6	10,000+	10,000+	361	0.3	Impact resistance Anti-lifting		
93430	Conformable	300				1.7	1.9	10,000+	10,000+	292	0.4	- ,		
9448A		150	White	Acrylic	Tissue	1.0	1.1	10,000+	1,284	299	0.4	• Up to 150°C short-term heat		
9080A		150	Clear	Acrylic	Tissue	0.8	1.3	10,000+	10,000+	372	0.4	resistance		
9077	High temp resistance	50	Clear	Acrylic	Non-woven	1.0	0.2	10,000+	10,000+	201	0.2	Up to 260°C short-term heat resistance		
UCT-10	_	10				0.3	0.5	10,000+	10,000+	91	0.1			
UCT-20	I lltra clear	20	Clear	Acrylic	PFT	0.5	0.7	10,000+	10,000+	128	0.1	• Produced in clean room		
UCT-30		30	Cicai	Activite		0.7	0.8	10,000+	10,000+	148	0.1	 High initial tack 		
UCT-50		50				1.1	1.2	10,000+	10,000+	319	0.2			
9415PC	Repositionable	50	Translucent	Acrylic	PET	0.06 / 0.01 ³	0.09 / 0.02 ³	3	1	869	0.1	• Low tack on liner, high tack on face		
9425HT	Repositionable	130	Clear	Acrylic	PET	0.44 / 0.11 ³	0.45 / 0.32 ³	175	80	145	0.3	• Medium tack on liner, high tack on face		

¹ Measured on acrylic side

² Measured on polycarbonate and silicone, respectively ³ Measured on high tack and low tack sides, respectively

3M[™] VHB[™] Tapes and 3M[™] PE Foam Tapes

Ultra thin and uniquely protective, 3M[™] VHB[™] Tapes create an exceptionally tight seal and a long-lasting bond that becomes stronger over time. This performance is made possible by high-strength, double-sided acrylic foam, which adds toughness to your designs. From weatherability to the ability to stand up to temperature extremes and impacts, this family of tapes helps keep devices running no matter where users take them.

3M[™] Double Coated PE Foam Tape outperforms alternatives currently available in the market, delivering performance and value. Constructed with polyethylene foam between layers of pressure sensitive adhesive, the result is a 3M innovation that die-cuts easily, absorbs shock, delivers high bonding strength with chemical resistance and reworks cleanly. Let 3M help enable your next design.

Design challenges:



Smartphones

Tablets /

Notebooks

IoT Smart Home /

Security

Spotlight on impact resistance

Devices go everywhere with users, which makes them vulnerable to bumps, drops and falls. The highstrength acrylic adhesive and high impact resistance of 3M[™] VHB[™] Tapes gives you the confidence to design for durability—and devices that can stand up to heavy use.









Wearables / Others Hearables



$3M^{M}$ VHB^M Tapes and $3M^{M}$ PE Foam Tapes

Product	Primary feature	Thickness (µm)	Color	Adhesive	Carrier Type	180° Peel, SUS (N/mm)	180° Peel, PC (N/mm)	Static Shear @ RT (min)	Static Shear @ 70°C (min)	Tensile Strength (kPa)	Tensile Impact (J)	Other features		
3M [™] VHB [™] 5906		150				0.9	0.9	10,000+	10,000+	419	0.4			
3M [™] VHB [™] 5907		200			Acrylic Foam	1.3	1.2	10,000+	10,000+	409	0.5			
3M [™] VHB [™] 5908	Drop	250	Dissis	Modified Acrylic		1.2	1.3	10,000+	10,000+	395	0.6	Conformable		
3M [™] VHB [™] 5909	resistance	300	Віаск			1.5	1.4	10,000+	10,000+	374	0.6	Water resistance		
3M [™] VHB [™] 5913		350				2.1	2.1	10,000+	10,000+	388	0.7			
3M [™] VHB [™] 5915		400				1.2	1.8	10,000+	10,000+	409	0.5			
3M [™] VHB [™] 86415¹		150			Acrylic Foam	1.3	1.4	5,254	10,000+	218	0.5			
3M [™] VHB [™] 86420 ¹	Tanaila internati	200	Disala	A 11		0.9	1.3	2,922	10,000+	244	0.9	Excellent conformability Water resistance		
3M [™] VHB [™] 86425 ¹	Tensile impact	250	Біаск	Acrylic		1.8	1.2	3,828	10,000+	255	1.0			
3M [™] VHB [™] 86430 ¹		300				1.9	1.5	3,850	10,000+	277	0.9			
3M [™] VHB [™] 5980-015 ¹	¹ High bonding strength	150			Acrylic Foam	1.2	1.8	10,000+	10,000+	324	0.5	ConformableWater resistance		
3M [™] VHB [™] 5980-020 ¹		200	White,	0 amelia		1.4	2.1	10,000+	10,000+	204	0.6			
3M [™] VHB [™] 5980-025 ¹		250	Black	Acrylic		1.3	2.2	10,000+	10,000+	177	0.8			
3M [™] VHB [™] 5980-030 ¹		300				1.1	1.8	10,000+	10,000+	341	0.8			
3M [™] VHB [™] 5981-020		200			Acrylic Foam / PET	1.2	1.5	10,000+	10,000+	469	0.4			
3M [™] VHB [™] 5981-025		250				1.3	1.7	10,000+	10,000+	594	0.6	 Easily converted with PET carrier Anti-lift Water resistance 		
3M [™] VHB [™] 5981-030	Good reworkability	300	Black	Modified Acrylic		1.5	1.8	10,000+	10,000+	590	0.4			
3M [™] VHB [™] 5981-035		350				1.6	1.8	10,000+	10,000+	542	0.5			
3M [™] VHB [™] 5981-040		400				1.3	1.7	10,000+	10,000+	442	0.5			
3M [™] VHB [™] 4914-015		150				1.6	1.0	10,000+	10,000+	371	0.6			
3M [™] VHB [™] 4914-020	High holding power	200	White	Acrylic	Acrylic Foam	1.8	1.0	10,000+	10,000+	442	0.7	Firm for easy convertingWater resistance		
3M [™] VHB [™] 4914		250				1.5	1.8	10,000+	10,000+	397	0.7			
5126-025 ¹	High push-out	250	Disala	0 amelia		1.6	2.9	10,000+	10,000+	777	0.6	Creep resistance		
5126-030 ¹	force	300	віаск	ACTYLIC	PE Foam	1.3	3.3	10,000+	10,000+	799	0.6	• Anti-lift		
94130HD1	Debondable with heat	300	Black	Specialty	PE Foam	1.1 / 1.6 ²	1.4 / 1.5 ²	10,000+	10,000+	699	0.4	Water resistance		

¹ Sample available globally, sales are limited to Asia

² Measured on debondable side and normal side respectively

3M[™] UV Activated Films and Tapes

Small electronics need strong adhesives to bond components for their lifetime of use. But it can be hard to find the right bonding strength in liquid adhesives without the added complexity of dispensing equipment, maintenance, and viscosity control. Thin, long-lasting, 3M[™] UV Activated Films and Tapes have semi-structural strength but handle like pressuresensitive adhesives (PSAs), making them ideal for for bonding small components. And since they cure with light, they work well in applications where high temperatures and pressure are of concern.

Design challenges:

Device types:



- Mesh bonding

Tablets /

Notebooks

Smartphones



The semi-structural strength of 3M[™] UV Activated Films and Tapes provides increased adhesion. This means stronger adhesion than typical, pressure-sensitive tapes and easier application than liquid adhesives.





IoT Smart Home /

Security



Wearables / Others Hearables



$3M^{\text{TM}}$ UV Activated Films and Tapes

Product	Primary feature	Thickness (µm)	Activation Condition	Open Time ¹	Color	Adhesive	Carrier Type	Modulus 1 Hz, 25°C (MPa) ²	180° Peel, SUS (N/mm)	Overlap Shear Al ³ (Mpa)	Push-out (Mpa)	Static Shear @ RT (min)	Static Shear @ 70°C (min)	Tensile Strength (kPa)	Tensile Impact (J)	Other features
81010		10	3 J/cm² (365 nm) 10 min						0.5	4.7	8.0	10,000+	10,000+	990	0.1	• Thin calipers as low as 10 micron
81025		25							0.6	6.1	13.8	10,000+	10,000+	1,100	0.2	
81050	bonding	50		Transparent Yellow	Specialty Adhesive	No Carrier	1,300	0.7	8.0	12.1	10,000+	10,000+	1,300	0.3	 Initial tack for positioning 	
81075	than PSAs	75							1.0	10.8	18.3	10,000+	10,000+	1,150	0.5	Cure at room temperature
81100		100							1.1	11.3	12.4	10,000+	10,000+	1,250	0.7	

¹ After UV activation

² Measured after fully cured

³ Aluminum - anodized

3M[™] Scotch-Weld[™] Structural Adhesives

Structural adhesives need to be strong - but that's just the beginning. Depending on your specific needs, you might be looking for shorter or longer open times, low-odor formulations, better environmental exposure performance, sealing properties, flexibility, adherence to specific substrates or any number of other features. At 3M, we know structural adhesives and the many ways they hold the world together, and our adhesives experts are always looking to help you bring your designs to life.

Design challenges:



- bonding
- substrate bonding

Spotlight on structural bonding

With solutions based on epoxy and PUR chemistries, 3M[™] Scotch-Weld[™] Structural Adhesives offer unmatched design flexibility. Choose one- or two-part epoxy adhesives for excellent durability and resistance to environmental extremes. One-part PUR adhesives combine the speed of hot melt with the structural benefits of moisture-curing chemistries.









Wearables / Hearables



Device types:

Smartphones

Tablets / Notebooks

IoT Smart Home / Security

Others

3M[™] Scotch-Weld[™] Structural Adhesives

Product	Alternative	Mix Ratio	Work	Cure	Viscosity	Thixotropic	Tg	Modulus,	Strain at Break		Overla	ap Shea	r Adhesion	(MPa)		Product features / Applications	
Troduct	Versions	(Volume)	Life	Condition ¹	(Pa.s)	(1 Hz /10 Hz)	(°C)	(MPa)	(%)	SUS ²	Al ²	PA	PC/ABS	PC	PBT	Troduct leaders / Applications	
1-Part Epoxy	<i>,</i>																
6102 Black	6101 Off-White ³	-	4 weeks	20 min/65°C 3 min/90°C	160	3.8	44	2,000	71	35	39	5	8	5	6	Excellent impact resistanceLow temperature cure	
6104 Black	6104 White	-	4 weeks	20 min/65°C	19	1.3	42	1,100	120	22	26	12	10	9	12	Low viscosityLow temperature cure	
6100LV Black	6100LV Off-White	-	4 weeks	20 min/65°C 3 min/90°C	2	1.7	19	26	93	8	8	5	10	6	5	Low viscosity, low modulusLow temperature cure	
6011LV White	6011ULV White ³	-	7 days	15 min/65°C 2.5 min/90°C	6	1.8	50	3,000	30	34	32	8	9	8	7	 Excellent shear strength Low temperature cure 	
2-Part Epoxy	/																
DP420LX Black	DP420LX Off-White	2:1	20 min	4 hours/65°C	45	2	83	2,020	12	29	31	9	9	12	6	 High peel and shear strength Environmental performance 	
1-Part Polyurethane Reactive Hotmelt																	
2710p Black	-	-	1-4 min⁴	48 hours/ 25°C/50% RH	10 (120°C)	1.5	7	70	>500	3	4	3	3	3	3	Fast rate of strength buildPSA-like tack	
2665B Black	-	-	2-5 min⁴	24 hours/ 25°C/50% RH	9 (120°C)	1.5	3	60	>500	4	6	3	4	4	3	 Low temperature reworkability PSA-like tack 	
2-Part Polyu	rethane																
DP6310NS Green	-	1:1	7 min	6 hours/25°C	250	4.0	53	2,100	72	26	29	9	9	11	12	Non-sagExcellent humidity resistance	
DP6330NS Green	-	1:1	25 min	9 hours/25°C	180	4.7	50	2,700	72	25	25	10	10	13	16	Non-sagLong work life	
2-Part Acryl	ic																
DP8805LH Green	-	10:1	3 min	1 hour/25°C	86	2.8	84	1,800	12	25	23	7	11	11	4	 Contains 100µm spacer beads High peel and impact strength 	
DP810 Black	DP810 Tan	1:1	10 min	6 hours/25°C 10 min/65°C	72	2.3	76	1,400	26	32	27	13	10	8	3	High impact resistanceHigh peel and shear strength	

¹ Time to achieve >80% full strength measured by overlap shear

² SUS - grit blast and 3M Surface Treatement AC130-2, AI - etched Aluminum

³ Contains UV-tracer

⁴ Maximum time allowed after applying adhesive to one substrate before bond must be closed and fixed in place

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