ThreeBond

General Catalog
Products Guide

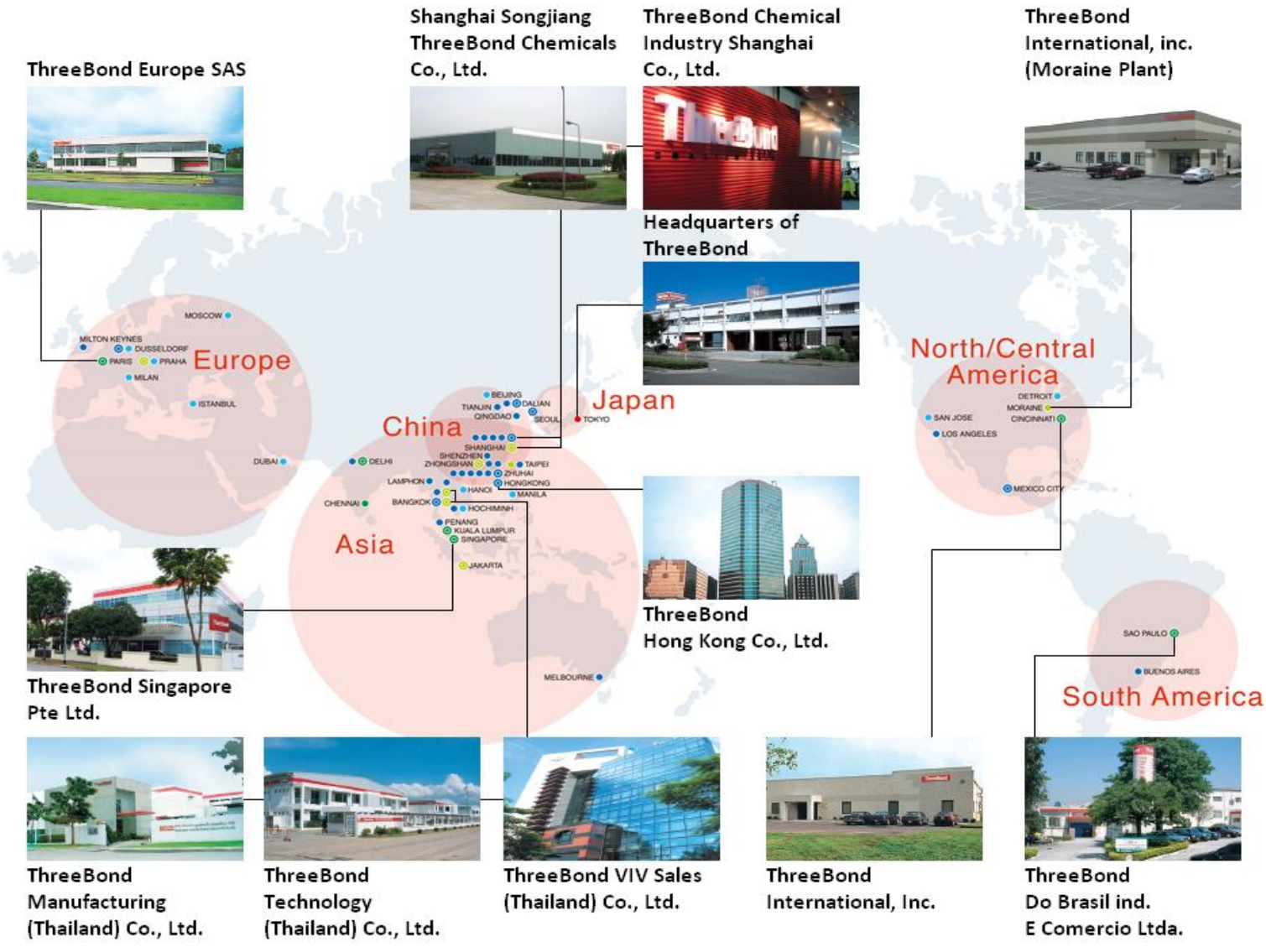
Sealants / Adhesives / Maintenance / Automobile Aftermarket

For a country like Japan where natural resources are scarce, "leaks" such as oil leaks and water leaks lead to loss of energy. The wish to prevent our precious energy from leaking is the foundation of ThreeBond's philosophy since its inception.

After seeing a drop of oil on a road that had leaked from a car, the founder of our company thought that if only this kind of leak could be prevented, resources can be saved, which can greatly contribute to the recovery of the Japanese economy. The result was the development of our company's first product, a liquid gasket called "ThreeBond No. 1."

ThreeBond's products are now used in a wide variety of applications. They are used in automobiles and other vehicles, transportation equipment, public construction materials, building materials, electric and electronic equipment, and high technologies. ThreeBond products have become necessities in the production processes of various products in many areas. Although the general public may not see ThreeBond products in their day-to-day living, we have secured the number one position in industrial sealants and adhesives, and we currently have production and sales systems in Japan, North and Central America, South America, Europe, Asia, and China. We are proud to be a company trusted by our clients.

Everywhere for Everyone



Market Introduction

Transportation and Equipment

Used in powertrain and electrical components, construction equipment, ships, etc.

Electrical and Electronics

Used in electrical appliances such as cellular phones and computers.

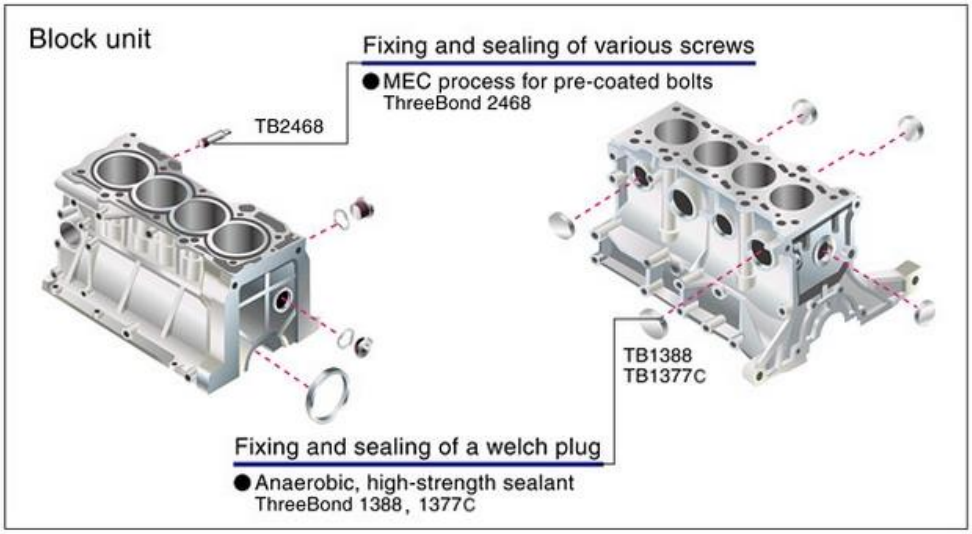
Industrial materials

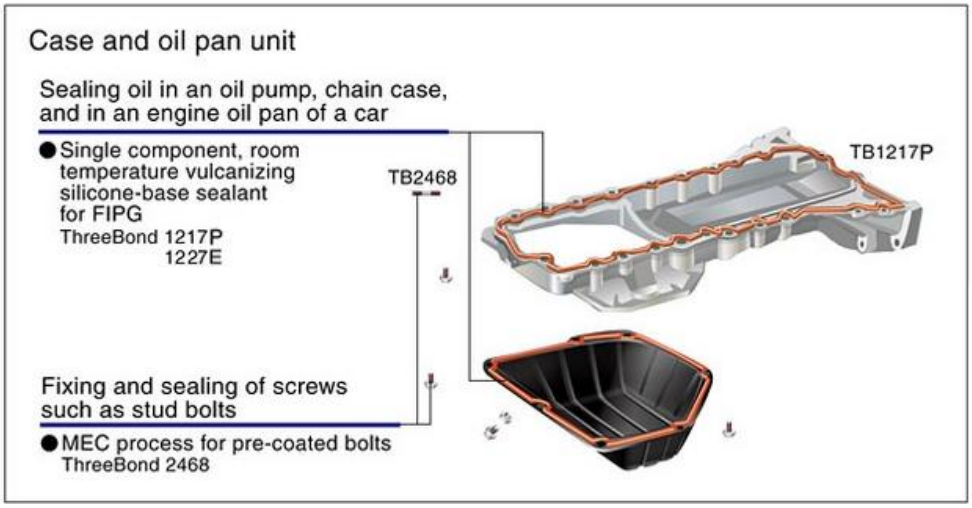
Used in infrastructure, construction, and general machinery related to the industrials materials and Public sector.

Automotive Aftermarket

Used in the automotive aftermarket.

Engine





Electronic control unit

Electronic control unit

Sealing of electrical components such as electrical and electronic parts

- Soft type UV curable adhesive ThreeBond 3081N

Smartphone

Touch panel module

Binding of liquid crystal panel and touch panel
Binding of cover panel and touch panel

- UV- Curable sheet adhesive ThreeBond 1630

Connection of a touch panel device

- Anisotropic conductive adhesives ThreeBond 3373C,3373F

Organic EL panel module

Binding of organic EL elements and sealed glass

- Heat-curable sheet adhesives ThreeBond 1655

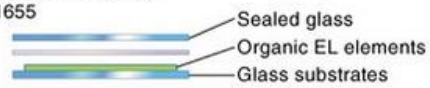


Image sensor module

Fixing of objective lens

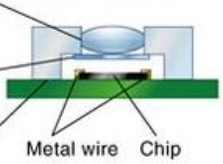
- Acrylic resin Threebond 3030 series

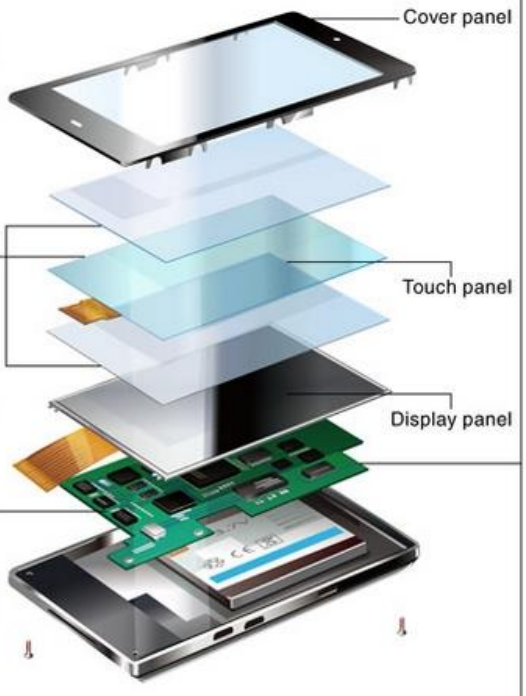
Fixing of IR cut filter

- Visible light curable adhesive Threebond 3170 series

Fixing of housing cases

- Epoxy resin Threebond 2222P





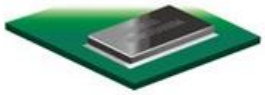
Fixing of screws

- Three-lock treatment Threebond 2365B Threebond 2365C

Substrate mounting

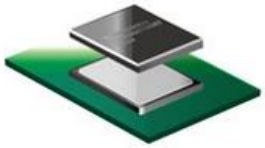
BGA/CSP implementation

- Under filling agent ThreeBond 2274 series



Bare chip implementation

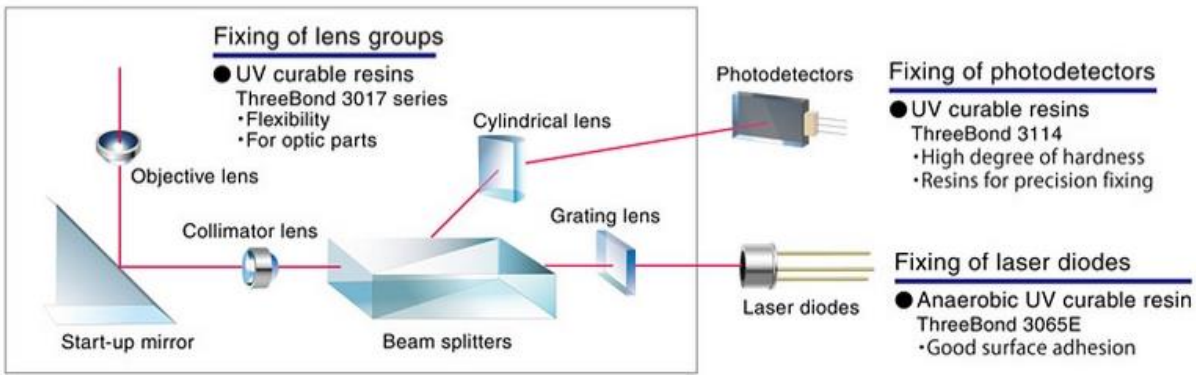
- Adhesives for bare chip implementation ThreeBond 2271G



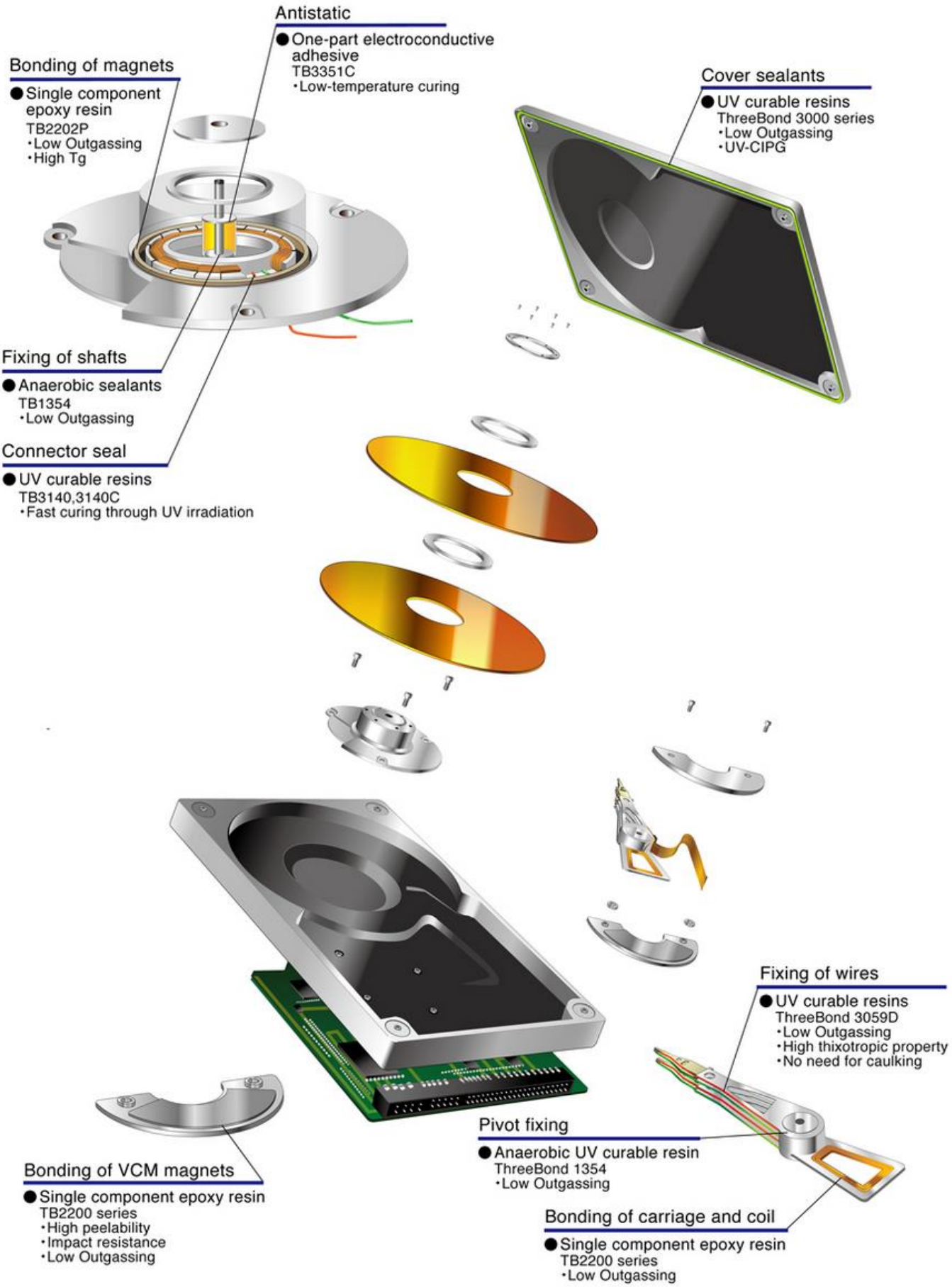
Electroconductive adhesives for crystal fragment

- Electroconductive adhesives for SMD ThreeBond 3303 series

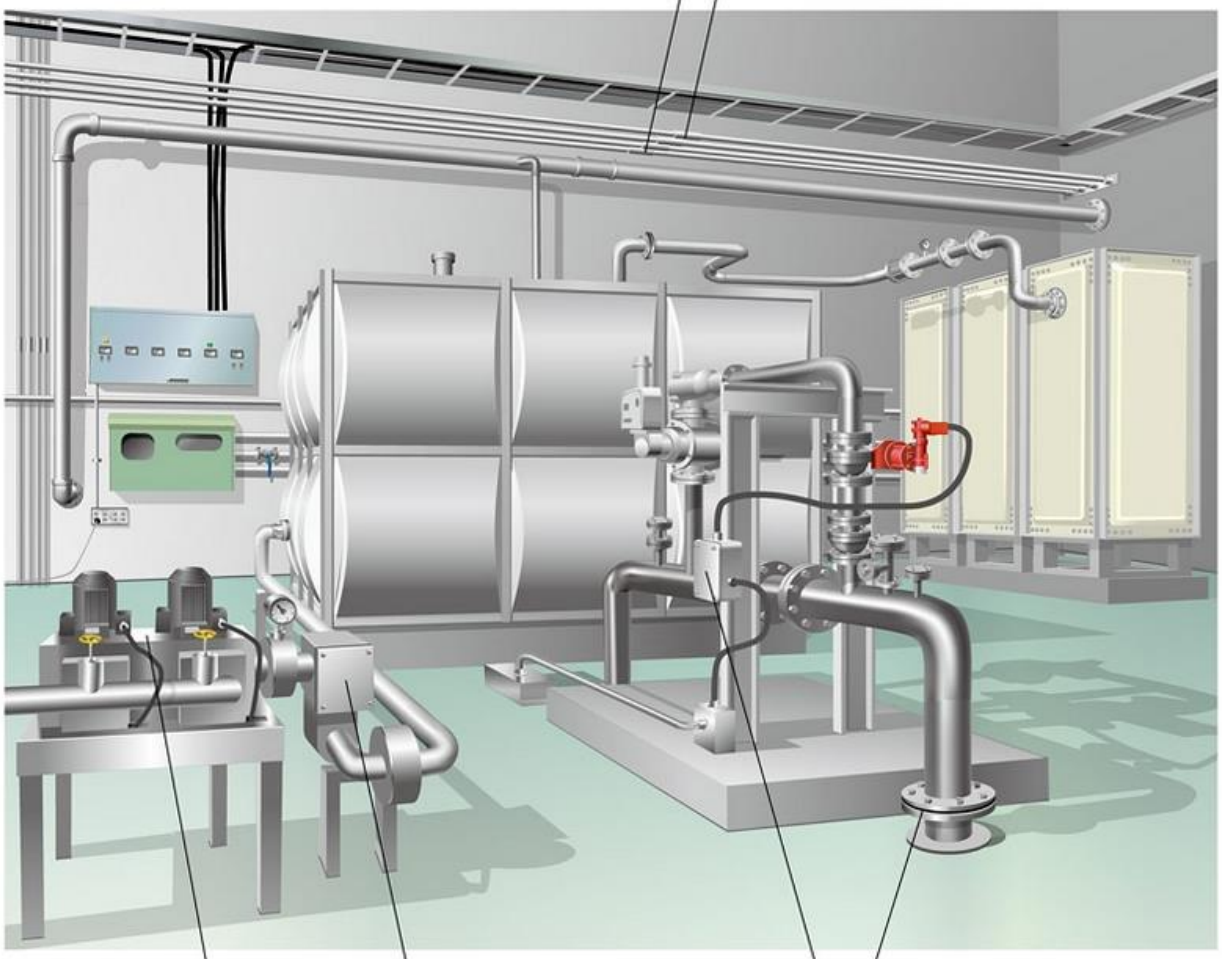
Optical Device



HDD


Antistatic
● One-part electroconductive adhesive
TB3351C
・Low-temperature curing
Bonding of magnets
● Single component epoxy resin
TB2202P
・Low Outgassing
・High Tg
Cover sealants
● UV curable resins
ThreeBond 3000 series
・Low Outgassing
・UV-CIPG
Fixing of shafts
● Anaerobic sealants
TB1354
・Low Outgassing
Connector seal
● UV curable resins
TB3140,3140C
・Fast curing through UV irradiation
Fixing of wires
● UV curable resins
ThreeBond 3059D
・Low Outgassing
・High thixotropic property
・No need for caulking
Pivot fixing
● Anaerobic UV curable resin
ThreeBond 1354
・Low Outgassing
Bonding of carriage and coil
● Single component epoxy resin
TB2200 series
・Low Outgassing
Bonding of VCM magnets
● Single component epoxy resin
TB2200 series
・High peelability
・Impact resistance
・Low Outgassing

Factory



Seal for the screws on city gas pipes

- Sealant for the screws on gas pipes
  ThreeBond 1110H

Anti-corrosion seal for the pipe-end surface of a lining steel pipe and its screws

- Liquid sealant for tap water pipes (for lining steel pipes)
  ThreeBond 1110H

Cleaning of mechanical parts

- Degreasing cleaner / For quick-drying mechanical parts
  ThreeBond 2706

Fixing and sealing of the screws and bolts of equipment, etc.

- Anaerobic high-strength sealants
  ThreeBond 1305

Seal for various screws and flange surfaces

- Single component, room temperature vulcanizing (RTV) silicone sealant
  ThreeBond 1215

Lubrication of sliding parts in equipment, etc.

- High-performance anti-corrosive lubricant
  ThreeBond 1807

Car (Exterior)

Glass
Implemented by a dealer

It maintains the look of window panes and significantly increases visibility.

Water spot remover

- Car wash
  Glass cleaner

Body
Implemented by a dealer

This system maintains the look of the car's body.

Glass-type body coating

- Coating
  Ultra glass coating

Shampoo

- Car wash
  Dry car wash
  Insect and bird lime remover
  Ceramic shampoo
  Prep-Clean

Undercarriage
Implemented by a dealer

This system provides rust prevention to the undercarriage. It has an excellent rust-prevention effect.

Anti-corrosion agent for car body

- Anti-corrosion
  Three Ruster series
  ThreeBond 6153
  ThreeBond 6153B
  ThreeBond 6153C
  ThreeBond 6153D

Tires
Implemented by a dealer

This system maintains the look of the tires and prevents deterioration. We also handle products for emergency repairs such as those for a blowout tire.

Coating

- Coating
  Tire dressing

Wheel
Implemented by a dealer

This system maintains the look of the wheels.

Coating

- Coating
  Ultra Glass Coating (wheel)

Car (Interior)

Air conditioner
Implemented by a dealer

This is an evaporator cleaning system for a car's air conditioners. It is effective in eliminating the car air-conditioner odor.

Cleaners

- Deodorizing
  Air-co Cleaner

Seats
Implemented by a dealer

This system cleans inside a car.

Cleaners

- Interior cleaning
  Car interior refreshing cleaner
  Fabric cleaner
  Leather feeder

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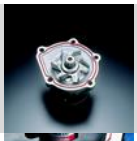
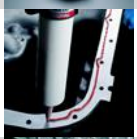
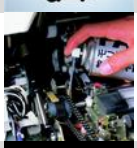
	**1100 Series**	Liquid Gaskets
	**1200 Series**	RTV Silicones
	**1300 Series**	Anaerobic resins
	**1400 Series**	Locking Agents
	**1500 Series**	Industrial Adhesives
	**1700 & 7700 Series**	Instant Adhesives
	**1800 & 1900 Series**	Rust Inhibitors & Lubricants
	**2000 & 2100 Series**	Two-Component Epoxy Resins
	**2200 Series**	One-Component Epoxy Resins
	**2700, 2800 & 6600 Series**	Industrial Parts Cleaners
	**3000 & 3100 Series**	UV Curing Adhesives
	**3300 Series**	Electro-Conductive Adhesives
	**3700 Series**	Heat Resistant Inorganic Adhesive
	**5200 Series**	Sealants for constructions

1100 Series : Liquid Gaskets

Liquid gaskets have been developed based on entirely different concept and leak-preventing theory from solid-sheet gaskets. By coating a mechanical joint with one of these liquid gaskets before assembly, the leaks can be prevented. These materials can have very important effects in improving the performance of equipment, prolonging its functional life, and reducing the total cost.

	Type	Main Component	Colour	Viscosity [Pa.s]	Service Temperature	Pressure Resistance [MPa]	Features
	Liquid Gaskets						
1101	Non-Drying	Vegetable oil	Reddish brown	850	-40 / +80°C	7.0	Good plastic resistance
1102	Non-Drying	Modified alkyd resin	Yellow	6.9	-40 / +150°C	9.5	Standard non-drying liquid gasket
1105B	Drying	NBR	Silver	3.5	-40 / +150°C	8.5	Standard drying liquid gasket
1109J	Drying	Water glass	Grey	Paste	-50 / +400°C	1.5	Seals automobile mufflers and other high temp. parts
1121	Non-Drying	Saturated polysester	Grey	300	-50 / +130°C	8.8	Non-Solvent Paste-Type, Odorless
1184	Semi-Drying	Synthetic Rubber	Grey	9.5	-40 / +150°C	10.0	High padding property, high resistance to vibration and impact
1184E	Semi-Drying	Synthetic Rubber	Black	8.5	-40 / +150°C	10.0	High padding property, high resistance to vibration and impact
	Anaerobic flange and pipe sealants						
1110H	Anaerobic	Methacrylic acid ester	White	35	-50 / +150°C	12.0	Leading in health & safety No risk or safety phrases
1132	Anaerobic	Methacrylic acid ester	Pink	10.0	-80 / +180°C	-	High temperature resistance
1133E	Anaerobic	Methacrylic acid ester	Blue	120	-60 / +150°C	-	High flexibility and good chemical resistance

1200 Series : RTV Silicones

This silicone-based liquid gasket fills gaps on a flange surface and thus completely avoid leaks. When cured, it forms an excellent rubber-like elastic body offering excellent resistance to vibration and shock. It also has an excellent resistance to heat, and effectively seals joints that are subjected to high temperature.
If both products are room temperature vulcanization type, it exists different curing mechanism :

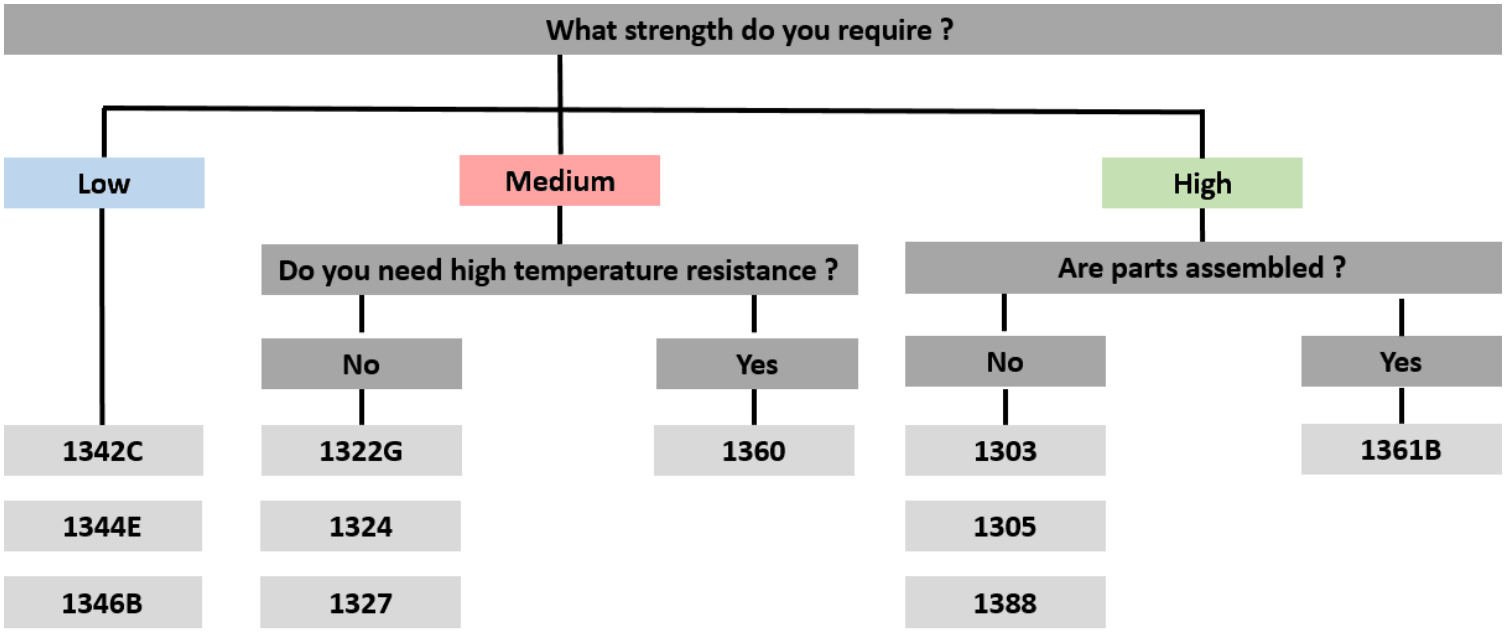
Curing mechanism	Features
Oxime type	*Excellent adhesion and oil resistance*
Acetone type	*Non-corrosive and quick drying, excellent resistance.*
Alcohol type	*Low corrosiveness and odour. Excellent stress characteristics.*
Acetic acid type	*Strong odour and corrosive to metals due to evolved gas*

	Colour	Viscosity [Pa.s]	Sag	Tack free time [min]	Hardness [Shore A]	Elongation [%]	Tensile strength [MPa]	Shear strength (Fe/Fe) [MPa]	Service temperature	Features
Silicone automotive flange sealants CIPG										
1206D	Grey	80	No-flow	5	41	471	2.2	2.3	-40 / +200(250)°C	High elongation, ideal for high vibration
1207B	Black	100	No-flow	8	30	400	2.0	0.9	-60 / +200(250)°C	Ideal for sealing large clearances
1207D	Silver	70	No-flow	5	60	170	4.0	2.0	-60 / +200(250)°C	Ideal for sealing large clearances
1208B	White	3.3	Flow	4	24	200	0.7	2.5	-60 / +200(250)°C	Good weather resistance, suitable for electronic
1209	Black	Paste	No-flow	5	42	270	2.1	1.7	-60/+250(300)°C	High temperature resistance grade
1215	Grey	70	Semi-flow	60	45	320	1.5	0.8	-60 / +200(250)°C	Excellent resistance to oils
1216	Grey	120 (SOD)	No-flow	20	60	200	3.0	2.0	-60 / +200(250)°C	Excellent resistance to oils, LLC, ATF
1216E	Grey	200 (SOD)	No-flow	6	57	330	3.3	2.5	-60 / +200(250)°C	High Adhesion
1217H	Grey	330	No-flow	5	51	470	2.6	2.3	-60 / +200(250)°C	High Adhesion, Excellent oil resistance
1217P	Black	240	No-flow	8	44	560	2.4	2.0	-60 / +200(250)°C	MEKO Free
1227C	Grey	300	No-flow	3	43	310	2.7	2.0	-60~+200(250)°C	High resistance to oils, high pressure resistance
1227E	Black	310 (SOD)	No-flow	20	33	390	2.3	2.1	-60~+200(250)°C	High resistance to oils, high pressure resistance
1281	Red	100	No-flow	10	60	190	3.1	0.9	-60~+200(250)°C	Gear oil resistant
1281B	Red	115	No-flow	10	60	220	4.8	2.0	-60~+200(250)°C	Auto. transmission fluid resistant
Silicone sealants, adhesives and potting agents										
1220G	White	65	Flow	10	20	500	2.2	1.0	-60~+200(250)°C	Low molecular siloxane content
1220H	White	65	No-flow	10	20	500	2.2	1.0	-60~+200(250)°C	Low molecular siloxane content
1224G	White	1.2	Flow	7	24	150	0.5	0.6	-60~+200(250)°C	Low molecular siloxane content
1225B	White	18	Flow	5	74	48	3.9	0.9	-60~+200(250)°C	Heat Conductive
1230G	Black	3.2	Flow	-	35	185	3.1	1.0	-60~+200(250)°C	Two-Part silicone

1300 Series : Anaerobic resins

The products in the ThreeBond 1300 Series are anaerobic curing adhesives and sealants, which unlike other products do not cure when exposed to air. Rather, when in contact with metallic ions, they cure in the absence of air at room temperature to form a solid plastic, completely filling the gaps between parts to lock and seal threads and joints.

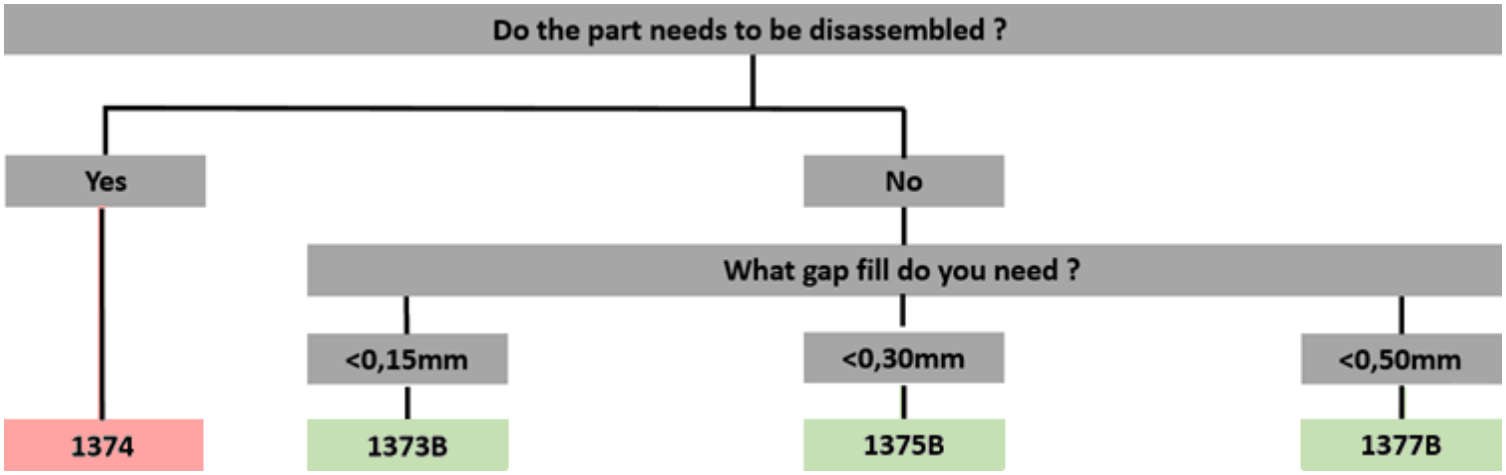
Thread lockers



	Viscosity [mPa.s]	Curing Speed		Retaining torque M10 (Fe)		Shear strength (Fe/Fe) [MPa]	Service temperature	Clearance [mm]		Features Break loose [N.m]
		15% [min]	100% [h]	Break loose [N.m]	Prevailing [N.m]			Recommended	Max	
1303	150	<10	24	>20	>25	35	-40~150°C	0.005~0.01	0.15	High strength
1305	600	<10	24	>20	>25	35	-40~150°C	0.01~0.02	0.30	High strength, High chemical resistance
1388	3000	<10	24	>18	>18	-	-40~150°C	0.02~0.05	0.50	High strength Thixotropic
1322G	150	<10	24	>10	>15	23	-40~150°C	0.005~0.01	0.15	Medium strength, Nutlock grade
1324	650	<20	24	>15	>15	28	-40~150°C	0.01~0.02	0.30	Medium strength, Bearing fit grade
1327	2500	<10	24	>20	>20	32	-40~150°C	0.02~0.05	0.50	Medium strength, Nutlock grade
1342C	150	<10	24	8.0	8.0	16	-40~150°C	0.005~0.01	0.15	Low strength, High vibration resistance
1344E	600	<10	24	10	8.0		-40~150°C	0.01~0.02	0.30	Low strength, High chemical resistance
1346B	2500	<10	24	14	7.0	-	-40~150°C	0.02~0.05	0.50	Low strength

	Viscosity [mPa.s]	Curing Speed		Retaining torque M10 (Fe)		Shear strength (Fe/Fe) [MPa]	Service temperature	Clearance [mm]		Features Break loose [N.m]
		15% [min]	100% [h]	Break loose [N.m]	Prevailing [N.m]			Recommended	Max	
1360	1150	<20	24	>15	>15	23	-40~200°C	0.01~0.05	0.30	High temperature resistance
1361B	15	<40	24	>15	>20	-	-40~150°C	0.005~0.01	0.15	Sealing porosity in castings

Retainers



	Viscosity [mPa.s]	Curing Speed		Retaining torque M10 (Fe)		Shear strength (Fe/Fe) [MPa]	Service temperature	Clearance [mm]		Features Break loose [N.m]
		15% [min]	100% [h]	Break loose [N.m]	Prevailing [N.m]			Recommended	Max	
1373B	125	<10	24	>30	>35	30	-40~150°C	0.005~0.01	0.10	High strength, Quick setting
1374	750	<10	24	>20	>10	-	-40~150°C	0.01~0.04	0.30	Excellent vibration resistance
1375B	800	<10	24	>30	>30	32	-40~150°C	0.01~0.02	0.30	High temperature retainer grade
1377B	2000	<10	24	>25	>35	30	-40~150°C	0.02~0.04	0.30	High viscosity retainer grade
1377C	2500	<10	24	>30	>30		-40~150°C	0.02~0.04	0.30	High viscosity retainer grade
1386D	2000	<15	24	>15	>15	-	-40~150°C	0.01~0.02	0.15	Thixotropic sealant for Welch plugs
1388	3000	<10	24	>18	>18	-	-40~150°C	0.02~0.05	0.50	High strength Thixotropic
CB3	2500	10	24	15	20	-	-60~150°C	0.01~0.10	0.50	Thixotropic high strength

Structural adhesives

	Viscosity [mPa.s]	Curing Speed		Hardness (D Shore)	SHear strength (Fe/Fe) [MPa]	90° Peel strength (Fe/Fe) [kN/m]	Service temperature	Clearance [mm]		Features
		15% [min]	100% [h]					Recommended	Max	
1359E	50	120	24	56	13	4.7	-40~150°C	0.05~0.15	0.50	Heat cure type
1359J	30	60	24	65	17	4.0	-40~150°C	0.05~0.15	0.50	UV, Heat or Activator cure type

Activators & Primers

	Main compound	Color	Viscosity [mPa.s]	Specific gravity	Features
3095C	Isopropylic alcohol	Amber	3	0.8	Solvent base, Flammable
30D002	Reactive methacrylate monomer	Blue	15	1.05	Not flammable

1400 Series : Locking agents and rust inhibitors for screws

The products in the ThreeBond 1400 series are synthetic-resin locking agents that prevent screws and bolts from loosening, leaking, or rusting. The force required to remove a screw to which 1400 has been applied is 10% to 20% greater than the force to tighten it. These products are standard materials, indispensable in the assembly of electronic and mechanical parts.
Being air drying resins they cure completely, even outside the confines of threaded sections. Therefore they can be used to replace conventional low strength anaerobic threadlockers and tamper-proof paints. Unlike anaerobic they can also be used on plastic components.

	Colour	Viscosity [mPa.s]	Solid Content [%]	Retaining torque Vs. Curing time B/N (Initial Tightening torque=0 N.m) [N.m]				Torque under heat B/N (Tightening torque=0 N.m) [N.m]			Torque Vs. Screw diameter B/N (Tightening torque=0 N.m) [N.m]					Water resistance (24h at 50°C) [N.m]	Oil resistance (24h at 50°C) [N.m]
				1 day	2 days	3 days	7 days	25°C	50°C	70°C	M3	M4	M6	M8	M10		
1401	Clear	350	31	0.8	1.5	3.0	10	10	6.0	4.0	0.3	0.6	3.5	5.5	10	6.4	7.7
1401B	Green	350	31	0.8	1.5	3.0	10	10	6.0	4.0	0.3	0.6	3.5	5.5	10	6.4	7.7
1401C	Red	350	31	0.8	1.5	3.0	10	10	6.0	4.0	0.3	0.6	3.5	5.5	10	6.4	7.7
1402	Brown	525	30	3.5	6.0	6.5	7.5	7.5	6.0	3.0	0.3	0.5	2.0	3.0	7.5	-	-
1402B	Green	525	30	3.5	6.0	6.5	7.5	7.5	6.0	3.0	0.3	0.5	2.0	3.0	7.5	-	-

1500 Series : Industrial Adhesives

The products in this series are industrial-use adhesives whose major components are solvent -based synthetic rubber and no nsolvent-based, moisture-curing special polymer. The products have strong initial adhesion and do not lose elasticity after bonding.

General adhesives

	Colour	Viscosity [mPa.s]	Solid Content [%]	Tack Free Time [min]	Tack retain time [min]	Temperature range	Peel Strength [kN/m]			Features
							Iron / Cloth	Iron / PVC	Iron / Rubber	
1501	Brown	5 000	25	10	90	-40~80°C	4.7	14.5	1.9	Multipurpose adhesive
1521	Brown	2 800	26	9	30	-40~100°C	5.2	3.7	3.7	Temperature up to 100°C
1521B	Black	4 700	27	10	90	-40~100°C	4.7	14.5	2.0	Black version of 1521
1521C	Black	Paste	60	5	40	-40~100°C	1.5	1.0	1.1	High viscosity version

MS Polymer adhesives

ThreeBond 1530 series is our one-part, non-solvent elastic adhesives, whose main component is a silyl-based special polymer. It cures by reacting with a slight amount of the moisture in the air.

	Colour	Viscosity [Pa.s]	Tack free time [min]	Elongation [%]	Tensile strength [Mpa]	Hardness [Shore A]	Shear Strength [MPa]											
							Aluminium	Iron	Acrylic	PPO	ABS	6.6 Nylon	PC	Polystyrol	PET	Phenol	PPS	PBT
1530	White	100	7	280	5.9	44	6.6	5.4	4.7	5.0	2.9	5.1	5.6	3.5	2.1	5.3	1.5	1.4
1530B	Black	110	7	380	3.0	48	4.4	4.1	3.3	3.6	3.5	3.4	3.8	2.9	2.3	3.6	1.2	-
1530C	Clear	100	7	200	4.1	55	4.3	3.5	3.8	4.7	2.4	3.2	4.5	2.5	-	4.3	1.3	1.1
1530D	Grey	20	5	220	3.2	34	2.5	2.9	2.6	2.1	1.3	2.2	2.4	1.2	-	-	-	-
1530P DBT Free	Black	6	8	140	1.6	26	2.9	2.5	2.3	-	2.0	1.6	2.0	-	2.0	2.6	0.6	0.8
1533 DBT Free	White	100	7	280	4.5	40	5.7	5.8	2.6	-	2.2	0.6	4.3	-	3.2	5.9	1.4	1.0
1533C DBT Free	Clear	100	7	145	3.8	50	4.7	4.6	3.8	-	2.0	3.3	3.2	-	2.4	4.3	1.3	0.8
1533D DBT Free	Grey	22	7	286	2.9	26	2.8	3.4	2.7	-	1.8	1.9	2.1	-	2.3	2.9	1.1	0.7
1533F DBT Free	Grey	180	-	460	3.0	25	3.9	3.7	4.5	1.3	3.6	4.3	4.2	-	3.8	4.6	3.0	1.8
1533K DBT Free	Black	47	12	480	3.0	19	4.1	4.1	2.8	-	-	-	3.3	-	-	-	-	-

TB 1537 Series : UL94-V0 certified MS Polymers

	Colour	Viscosity [Pa.s]	Tack free time [min]	Elongation [%]	Tensile strength [Mpa]	Hardness [Shore A]	Shear Strength [MPa]										
							Aluminium	Iron	Acrylic	PPO	ABS	6.6 Nylon	PC	Polystyrol	PET	Phenol	PPS	PBT
1537	White	55	4	29	5.0	72	4.3	4.0	1.7	3.1	0.8	1.6	3.7	1.1	1.2	3.8	1.0	0.9
1537B	Black	55	4	33	3.9	74	4.3	4.2	1.6	3.3	1.0	2.1	3.6	1.1	1.1	3.9	1.1	0.8
1537D	Grey	55	4	29	4.3	71	4.3	4.4	1.8	2.9	0.9	1.8	3.6	1.0	1.2	4.0	1.0	0.9

Water base Pressure Sensitive Adhesive (PSA)

	Viscosity [Pa.s]	Open time [min]	180° Peel Strength [kN/m]																	
			FR4 / Al	ABS / Al	Polyester / Al	PE / Al	PP / Al	PC / Al	PVC / Al	Nylon 66 / Al	PPS / Al	PBT / Al	PET / Al	POM / Al	Al / Al	Tin / Al	PET / PS	PET / ABS	PET / Acryl	PVC / PS	PVC / ABS	PVC / Acryl
1541C	1.12	20	1.6	1.7	2.0	1.3	1.6	1.6	1.9	1.4	2.0	2.0	1.8	2.0	2.1	2.0	-	-	-	-	-	-
1542B	4.5	60	1.6	1.8	-	1.4	-	-	-	-	-	-	-	1.4	2.5	-	-	-	-	-	-	-
1549	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	0.7	0.8	0.9	1.5	1.2
1549B	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.8	0.7	0.8	0.9	1.5	1.2
1555C	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-
1555D	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	-

1700 Series : Instant Adhesives

The products in the ThreeBond 1700 series are cyanoacrylate instant adhesives. They are provided in a variety of grades to meet your differing purposes and applications. Please select the products you desire from the list below. Feel free to consult our sales representatives, who will be happy to help you decide which grade best meets each of your needs.

	Colour	Viscosity [mPa.s]	Set time [s]		Shear Strength [MPa]													
			Steel	NBR	Steel	Al	SUS	Copper	Brass	Hard PVC	PC	6-Nylon	PPO	ABS	FR4	PBT	PPS	Polyacetal
	Multi-purpose grade																	
1741	Clear	3	15	5	14.2	16.5	12.7	8.6	5.1	1.2*	*	3.4	*	4.2*	8.3	1.3	3.2	1.4
1742	Clear	30	4	6	11.9	5.0	-	-	-	2.5*	3.4	-	-	4.7	15.4	-	1.4	3.5
1743	Clear	100	10	10	19.3	16.6	13.4	9.3	8.6	-	-	2.7	-	5.2	12.2	2.0	4.3	1.8
1745	Clear	450	10	7	22.2	16.6	17.5	11.2	9.6	-	-	2.3	-	5.1	11.1	1.8	4.2	1.5
1747	Clear	2000	20	5	19.0	17.3	15.4	11.5	10.4	-	-	2.5	-	5.5	11.1	1.9	3.4	1.5
	Gel type																	
1739	Clear	23 Pa.s	30	80	18.4	13.0	10.5	16.5	4.6	8.0	7.0	6.5	5.3	6.1	13.0	0.5	2.6	0.8
1739B	Clear	15 Pa.s	-	35	24.5	11.2	10.5	6.9	4.6	1.6	5.9	5.4	5.0	5.9	14.2	0.6	2.8	0.5
1739C	Clear	70 Pa.s	60	60	-	-	-	-	-	-	3.9*	-	-	-	-	-	-	-
	Low smell and low blooming type																	
1721D	Clear	6	40	2	14.4	13.2	12.3	9.1	8.1	2.3*	9.0*	4.9	5.0	7.1*	13.8	2.5	2.0	1.2
	Impact and temperature resistance																	
1781	Clear	3	10	10	16.4	15.3	16.3	9.7	13.6	*	*	4.1	6.3	*	11.6	1.8	3.2	1.5
1782	Clear	100	20	10	25.5	17.8	18.4	13.7	15.1	*	*	5.0	*	*	11.8	1.7	4.0	1.6
1783	Clear	1000	30	10	25.0	18.0	17.6	12.9	16.1	*	*	5.0	6.5	*	12.1	1.8	3.3	1.7
1784	Clear	1800	-	10	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-
	Fast cure type																	
1786	Clear	70	5	3	18.0	13.0	12.9	9.1	10.1	*	5.4	5.9	6.5	*	12.3	1.7	4.0	1.6
1786S	Clear	100	-	10	9.0	-	-	-	-	-	-	-	-	-	-	-	-	-
1786V	Clear	3	10	3	18.0	13.0	12.9	9.1	-	*	5.4	-	-	*	12.3	-	-	-

* : Material broken

	Colour	Viscosity [mPa.s]	Set time [s]		Shear Strength [MPa]													
			Steel	NBR	Steel	Al	SUS	Copper	Brass	Hard PVC	PC	6-Nylon	PPO	ABS	FR4	PBT	PPS	Polyacetal
	Moisture resistance type																	
1757	Clear	1200	30	20	19.2	16.0	21.4	18.6	14.1	3.2*	5.1*	2.7	2.8	8.1*	10.8	2.5	2.0	1.2
1757B	Clear	2500	4	25	17.5	7.8	-	-	-	2.5*	3.4	-	-	5.9	4.4	-	1.4	3.5

* : Material broken

Activator / Primer / Remover

	Application	Main component	Appearance	Viscosity
1791C	Activator	Solvent	Clear	0.8
1795D	Remover	Solvent	Clear	-
1796B	Activator	Amine based (Solvents)	Light yellow transparent	0.9
1797	Primer	Solvents	Light yellow transparent	0.85

7700 Series : Gold series - Instant Adhesives

Gold Series : Ultra fast curing type

The next generation of Cyanoacrylates has arrived. With a range of features and viscosities available this new range offers significant benefits over traditional Cyanoacrylates. These include :

- Ultra fast curing on standard substrates
- Very high initial bond strength
- Fast curing of porous or difficult to bond substrates such as polyacetal, EPDM and POM
- Elastomer toughened for high peel strength and shock resistance

	Viscosity [mPa.s]	Set time [s]		Shear Strength [MPa]															
		Steel	NBR	Steel	Al	SUS	Brass	Copper	Nickel	Zinc Chromated	Hard PVC	PC	PA 6.6	ABS	FR4	PBT	PET	PPO	PPS	Acrylic
7721	5	15	2	18.4	12.9	7.7	10.8	12.4	7.5	7.1	2.7	7.6*	8.1	4.1*	11.1	1.8	7.3	5.1	1.9	6.4*
7737	2000	90	90	25.7	20.4	18.2	24.1	20.3	26.8	9.3	1.5	6.2*	11.9	7.2*	16.0	2.4	8.8*	4.0	3.2	6.6*
7738	5000	90	90	27.7	21.4	17.5	26.1	18.8	28.6	8.4	1.4	5.4*	11.6	7.6*	17.5	2.5	11.5*	4.0	3.7	5.4*

	Viscosity [mPa.s]	Set time [s]		Shear Strength [MPa]															
		Steel	NBR	Steel	Al	SUS	Brass	Copper	Nickel	Zinc Chromated	Hard PVC	PC	PA 6.6	ABS	FR4	PBT	PET	PPO	PPS	Acrylic
7781	2	2	2	14.0	14.9	12.2	9.0	12.7	13.3	7.5	3.0	6.9*	13.1*	6.2*	19.2	4.3	10.5*	8.0	1.9	7.6*
7782	15	2	2	14.2	15.3	15.4	10.9	14.5	14.8	7.8	4.9*	7.6*	12.1*	6.2*	20.0	4.2	10.2*	6.7	2.5	7.8*
7784	160	3	2	15.3	16.1	15.4	11.5	13.3	15.7	8.0	4.4*	6.9*	12.0*	6.3*	18.8	4.5	10.6*	6.8	2.5	8.7*
7785	500	3	2	16.3	14.6	18.4	10.3	14.2	12.4	6.0	6.9*	9.9*	13.3*	7.0*	19.8	4.3	11.8*	6.7	2.8	9.1*
7786	1000	2	4	17.0	14.9	19.8	10.4	11.9	11.5	7.0	5.0*	10.1*	13.0*	6.6*	22.2	5.7	10.9*	7.0	2.6	9.5*
7789	25 Pa.s	10	7	21.0	15.9	20.9	9.8	13.0	6.3	5.1	3.1*	8.6*	9.2*	6.3*	18.1	4.5	8.6*	11.5*	2.1	6.2*

* : Material broken

Activator / Primer

	Application	Main component	Appearance	Viscosity
7797	Activator / Primer	Solvents	Clear	-

1800 & 1900 Series : Rust Inhibitors & Lubricants

These products have penetrativity so powerful that they reduce squeaks of any kind. Also they work to the inside of rust and dirt and make them rise to the surface so that they can be removed easily. With their water-repellent, moisture-resistant, rust-inhibiting power, they remove moisture and rust from metal surfaces. A varied offering of package types, from aerosol to sheet form, is provided to meet many different needs.

	Main Component	Appearance	Viscosity [mPa.s]	Specific gravity	Solid content [%]	Coefficient of Friction			Features
						5 MPa	10 MPa	15 MPa	
1801B	Paraffin type	Transparent brown	3.8	0.80	33	0.12	0.11	-	Multi purpose lubricant
1802B	Paraffin type	Transparent brown	3.0	0.78	32	0.12	0.11	-	Penetrative lubricant & corrosion inhibitor
1805B	Refined solvent	Clear	1.14	0.76	-	0.12	-	-	Penetrating Oil
1807	Molyb-denum	Light brown	2.7	0.80	22	0.13	-	-	Lubricant, corrosion inhibitor
1810C	Teflon powder	White powder	-	1.4	100	-	-	-	Dry powder lubricant
1855	Silicone Oil	Transparent brown	-	0.97	100	-	-	-	Silicone Grease
1901	Molyb-denum	Black Paste	-	1.4	97	0.12	0.11	0.09	Anti Seize Agent Paste type
1910	Molyb-denum	Black	25	1.4		0.11	0.10	0.09	Anti Seize Agent Spray type
1920	Lithium grease	Black	-	0.90	99	0.11	0.12	0.12	Anti Seize Agent
1925	Rubber grease	Dark Grey	1.1	0.91	31	-	-	-	Rubber Grease

2000 & 2100 Series : Two Components Epoxy Resins

Each of the products in this series consists of a main agent and a curing agent. When these agents are mixed and stirred, a chemical reaction and curing occur. The workability and other properties of a product after curing depend on the combination of agents. The series offers a wide variety of grades, from which you can select those whose properties, such as curing speed, properties after curing, and appearance, are best suited to your needs.

Hardener	Mix ratio	Colour	Viscosity [mPa.s]	Pot life	Curing conditions	Hardness [shore]	Shear Strength (Fe/Fe) [MPa]	Tg [°C]	CTE [ppm)	Features
	2022 (Light Yellow Transparent)				**Viscosity = 13 000 mPa.s**					
2102	1:1	Light yellow	6 500	7~9min	25°C x 12h	D74	15	-	-	Fast cure type, little flexibility
2102B	100:25	Light yellow	2 800	20min	25°C x 24h 100°C x 1h	D82	16	70	57	Fast cure type
2103	100:10	Light yellow	20	25min	25°C x 24h 100°C x 1h	D88	17	90	46	Medium heat resistance
2104	1:1	Red brown	950	25min	25°C x 24h 100°C x 1h	D70	18	37	130	Rubber type, good impact resistance
2105C	100:50	Red brown	1 800	70min	25°C x 24h 100°C x 1h	D84	22	80	76	Good workability
2105F	1:1	Red brown	40 000	60~90min	25°C x 24h 100°C x 1h	D81	20	63	80	Medium flexibility
2131D	100:33	Light yellow	10	4~5h	100°C x 1h 80°C x 4h	D85	16	82	50	Good transparency, low contraction
	2023 (Light Yellow Transparent)				**Viscosity = 900 mPa.s**					
2102B	100:25	Light yellow	2 800	22min	25°C x 48h 100°C x 1h	D80	16	68	59	Fast cure type
2103	100:10	Light yellow	20	27min	25°C x 48h 100°C x 1h	D85	16	80	50	Medium heat resistance
2105C	100:50	Red brown	1 800	80min	25°C x 48h 100°C x 2h	D82	20	76	77	Little flexibility
2105F	1:1	Red brown	40 000	2h	25°C x 48h 100°C x 1.5h	D80	18	60	82	Medium flexibility, impact resistance
2131D	100:33	Light brown	10	4~5h	80°C x 4h 100°C x 2h	D81	17	79	63	Good transparency, low contraction
	Special Grades : Kits									
2081D	1:1	White / clear	11 000 / 10 000	60min	25°C x 24h 60°C x 1h	D60	13	-	-	High peel strength on polyvinyl
2082C	1:1	White / Clear	150 000 / 16 000	70min	25°C x 24h 60°C x 1h	D76	25	-	-	High shear strength, long pot life
2086M	1:1	Clear / Clear	13 000 / 10 000	5min	25°C x 12h	D85	20	45	65	Fast cure type, good transparency

2200 Series : One Component Epoxy Resins

The products in this series are enhanced, one-part, epoxy-compound resins developed for electric and electronic equipment. As such equipment has become smaller, lighter, and more powerful, an epoxy resin is required to have better electrical, chemical, and thermophysical properties. The 2200 series has been developed to meet these requirements. It is offered in several types, one of which is a high-peel-adhesive-strength type.

	Colour	Viscosity [Pa.s]	Curing Conditions	Hardness [D Shore]	Tg [°C]	CTE1 [ppm/°C]	Shear Strength (Fe/Fe) [MPa]	Volume resistivity [E16 x ohm.cm]	Breakdown voltage [kV/mm]
	For general bonding, sealing, and casting. Cures at 70°C or higher								
2202	Black	13	70°C x 50min	88	105	74	10.0	13.0	22
2202C	White	27	70°C x 50min	90	105	61	15.5	-	-
2204	Black	28	70°C x 50min	89	105	69	13.0	1.7	16
2206C	White	90	70°C x 50min	87	107	98	13.0	2.1	16
2206D	White	60	70°C x 50min	86	117	84	15.0	0.5	-
	For general bonding, sealing, and casting. Cures at 80°C or higher								
2210	Black	8.0	90°C x 30min	92	120	75	14.7	1.5	23
2212	Black	13	90°C x 30min	92	100	49	15.0	5.7	23
2212B	Black	25	80°C x 30min	93	130	45	8.9	1.6	23
2215	Black	80	90°C x 30min	94	125	42	14.7	5.7	23
2215D	Black	140	90°C x 30min	85	110	80	17.7	-	-
2217B	Black	180	80°C x 30min	95	120	40	9.8	1.6	24
2219C	Black	200	100°C x 30min	94	95	47	19.0	0.6	34
	Surface Mounting Adhesives (SMA)								
2217H	Pink	196	80°C x 220s	89	99	77	25.7	1.7	22
2217L	Pink	154	80°C x 220s	88	99	75	22.6	1.6	22
	For general bonding, sealing, and casting. Cures at 100°C or higher								
2221D	Red brown	13	100°C x 60min	91	123	49	18.0	2.1	19
2222P	Black	45	100°C x 60min	89	115	45	24.0	0.3	-
2222S	Black	30	100°C x 30min	82	90	55	14.0	-	-
2223Q LOW HALOGEN	Black	33	100°C x 60min	91	125	34	18.0	1.7	31
2224	Red Brown	80	120°C x 30min	95	125	38	16.7	1.1	17
2224D	Black	60	120°C x 30min	83	98	65	22.5	0.2	-

	Colour	Viscosity [Pa.s]	Curing Conditions	Hardness [D Shore]	Tg [°C]	CTE1 [ppm/°C]	Shear Strength (Fe/Fe) [MPa]	Volume resistivity [E16 x ohm.cm]	Breakdown voltage [kV/mm]
	For general bonding, sealing, and casting. Cures at 120°C or higher								
2230B	Black	8.0	120°C x 60min	84	70	106	25.5	0.20	-
2232	White	27	120°C x 40min	90	130	45	15.6	0.25	10
2232C	White	45	150°C x 30min	85	165	61	17.7	-	-
2232E	Black	16	120°C x 30min	75	116	62	37.0	1.1	30
2232G	Black	700	120°C x 30min	75	120	50	28.0	0.63	31
2233K	Black	34	120°C x 30min	85	159	41	17.0	1.70	30
2233L	Black	25	120°C x 30min	86	-	-	23.0	-	-
2233Q	Black	20	120°C x 10min	79	95	57	25.0	0.61	24
	Die Attach LOW HALOGEN								
2271G	White	15	190°C x 5s	-	103	52	24.0 (FR4)	2.0	-
2271J	White	50	190°C x 5s	-	111	45	23.0 (FR4)	2.0	-
	Magnet bonding								
2273D	White	75	150°C x 30min	86	120	62	35.0	0.96	20
2273E	White	75 thixo	175°C x 15min	86	120	62	35.0	0.67	31
2273F	D +Glass balls	75	200°C x 5min	86	120	62	35.0	-	-
	Underfills								
2274	Black	12	70°C x 50min	86	65	93	11.0	-	-
2274E	White	3.5	120°C x 5min	-	106	47	16.0	0.18	-
2274F	Blue	3.0	120°C x 10min	-	89	54	20.0	0.24	-
2274S	Blue	3.5	120°C x 10min	-	124	58	23.0	1.60	-
	For special purpose								
2270C	Grey	65	120°C x 30min	93	140	41	21.6	-	-
2280E	Black	1.0	120°C x 120min	87	125	54	12.4	-	20
2285D	Milky white	140	150°C x 30min	87	180	33	27.0	1.4	33
2288B	Milky white	65	150°C x 30min	89	145	48	17.0	2.1	29
2295D	Blanc	15	120°C x 60min	85	132	29	17.0	0.3	28

2700, 2800 & 6600 Series : Industrial parts cleaners

The products in the ThreeBond 2700, 2800 & 6600 series are industrial cleaners for removing grease and dirt. They are excellent for cleansing a wide range of materials, from mechanical parts to plant floors.

	Main Component	Appearance	Viscosity [mPa.s]	Specific Gravity	Solid Content [%]	Features
2706	Hydrocarbons Solvents	Clear	-	0.67	0.0	Quick dry cleaner
2720C	Water base	Clear	500	1.03	5.0	Water base Lubricant
2890B	Solvents	Clear	-	0.75	0.0	Quick dry cleaner
2890E	No Volatile Solvents	Clear	1.8	1.09	-	Multi-purpose cleaner
6602M	Hydrocarbons Solvents	Clear	-	0.82	0.0	Brake cleaner
6602W	Hydrocarbons Solvents	Clear	-	0.70	0.0	Solvent base cleaner

3000 Series : UV Curing Acrylate Resins

The products in the ThreeBond 3000 Series are one-part, radical- and ultraviolet curing, non solvent adhesives that have been developed by the application of our research, our proprietary technologies, and our know-how. They are advanced industrial materials for use in sealing, bonding, and coating. They are recognized as cost-effective products for a variety of uses, such as the electrical and electronics industries, automobile manufacture, optics, and OA devices.

	Colour	Viscosity [mPa.s]	Hardness [Shore]	Young Modulus [Mpa]	Elongation [%]	Tensile strength [Mpa]	Tg [°C]	CTE [ppm/°C]	Shear strength [MPa]						
									PC / PC	AC / AC	Verre / Verre	Verre / FR4	Verre / ABS	Verre / PBT	Verre / Fe
3001C	Light yellow	50	A30	-	250	1.8	-	-	-	-	3.2	-	-	-	-
3003G	Green	1 500	A70	-	-	29.0	-	-	-	-	-	-	-	-	-
3003H	Clear	1 500	A77	38	210	12.5	36	92	4.2	4.5	2.4	-	-	-	-
3013H	Brown	4 200	D85	2600	100	9.5	60	75	3.0	-	-	-	-	-	-
3013R	Clear	10 000	A50	15	150	3.0	-10	219	4.3	1.8	2.4	2.4	-	-	1.9
	UV for Coating and Bonding														
3042	Clear	20	D85	590	5	59.0	60	210	3.7	2.0	4.0	4.0	2.1	1.1	-
3042M	Clear	20	D85	590	5	59.0	60	210	4.0	2.1	3.9	4.2	1.9	1.3	-
3045C	White	2 800	D65	-	12	11.5	-	-	7.3	-	-	-	-	-	-
3052	Light brown	11 000	D90	780	0	78.0	83	57	2.2	2.0	4.0	4.0	4.0	0.3	-
3052C	Light yellow	8 000	D65	290	160	31.0	90	270	6.0	2.0	4.0	4.0	4.0	1.3	-
3052D	Light yellow	43 000	D70	170	210	32.0	78	27	6.0	2.0	4.0	4.0	4.0	2.0	7.5
3059D	White	80 000	D86	-	-	-	82	-	-	3.0	8.0	-	-	-	3.0

High peel strength adhesive designed for hard to bond materials (PET, PEN, PPS …)

	Color	Viscosity [mPa.s]	Hardness [Shore]	Young Modulus [Mpa]	Elongation [%]	Tensile strength [Mpa]	Tg [°C]	CTE [ppm/°C]	Shear Strength [MPa]				
									ZnDc / Glass	Zeonex / Zeonex	Zeonex / ZnDc	Zeonex / PPS	Zeonex / LCP
3017D	White	13 000	A41	7.0	-	-	-22	249	4.3	2.6	3.0	1.2	1.0
3017E	White	25 000	A35	8.8	-	-	-20	252	3.0	2.8	3.0	1.2	1.0
3017F	White	7 500	A58	10	-	-	-	-	3.4	-	3.9	2.2	1.9

Dual Cure Adhesives

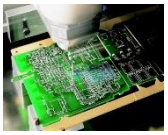
	Color	Viscosity [mPa.s]	Hardness [Shore]	Young Modulus [Mpa]	Elongation [%]	Tensile strength [Mpa]	Tg [°C]	CTE [ppm/°C]	Shear Strength [MPa]					
									PC / PC	AC / AC	AC / Fe	Glass / Glass	Glass / Fe	Fe / Fe
	UV + Moisture													
3056F	Green	6 000	D65	1500	20	-	70	112	7.5	3.2	-	6.4	7.5	-
	UV + Heat													
3057	Milky White	35 000	D89	-	1	59.0	-	59	1.7	2.0	-	4.0	4.0	15.9
3057B	Milky White	18 000	D88	3500	0	-	-	60	-	-	-	-	4.7	15.6
3057F	Light yellow	9 000	D79	1800	140	24.0	75	84	4.1	2.9	-	6.9	8.8	22.0
	UV + Anaerobic													
3062	Light yellow	8 000	D70	220	200	25.0	-	127	-	5.0	5.0	-	10.0	-
3062D	Blue	150	D80	740	10	20.0	-	-	9.7	8.3	-	-	18.0	-
3062H	Light yellow	2 000	D80	-	90	36.0	-	-	3.3	2.6	-	-	7.3	7.6
3062I	Light yellow	2 500	D70	270	150	-	-	-	-	-	-	-	-	-
3062K	Light yellow	7 000	D65	-	250	15.0	-	-	3.9	4.9	-	-	7.4	14.0
3062Q	Green	12 000	D65	82	220	14.0	-	-	8.8	5.1	-	-	4.4	12.0
3062U	Light brown	1 000	D70	38	250	14.7	74	-	-	-	9.8	9.8	12.7	12.7
3064	Light yellow	5 000	D65	-	200	30.0	65	100	-	4.9	4.9*	-	10.3	14.5
3065E	Light yellow	7 000	D65	263	200	32.0	105		-	6.9	12.3	-	11.7	15.4
3067	Light yellow	600	D90	-	0	65.0	77	130	1.6	2.0*	-	4.0	4.9	14.2
3067B	Blue	120	D93	-	2	65.0	83	60	-	-	-	-	4.9	15.9
3067C	White	4 000	D88	-	2	65.0		59	-	-	-	-	6.5	13.8

Glues for engineering plastics and optical parts

	Color	Viscosity [mPa.s]	Hardness [Shore]	Young Modulus [Mpa]	Elongation [%]	Tensile strength [Mpa]	Tg [°C]	CTE [ppm/°C]	Shear Strength [MPa]						
									Glass / Glass	Glass / ABS	Glass / LCP	Glass / Alu	Glass / PPS	PC / PC	Acrylic / Acrylic
3033	Blue	40	D80	-	120	20	-	-	*	-	-	-	-	-	6.4
3033B	White	35	D80	-	100	27	70	112	6.9*	6.1*	-	-	2.0	6.4*	3.5
3034	White	20	D68	-	230	19	37	101	-	6.0*	-	-	-	5.0*	4.0*
3036	Light grey	35	D77	6400	-	-	30	77	-	-	5.1	10.0	5.7	10.0	7.2
3036E	Light orange	10.5	D58	1000	-	-	90	74	-	-	-	-	5.6	-	-

* : Material failure

3100 Series : UV Curing Resins



Each of the products in ThreeBond's 3100 series is a one-part, nonsolvent adhesive, cation- and ultraviolet-curing. These products, developed by the application of our research and our proprietary technologies and know-how, are advanced industrial materials for use in sealing, bonding, and coating. They are recognized as cost-effective products in various uses, such as the electrical and electronics industries, automobiles, optics, and OA devices.

OLED & LCD Sealants

	Color	Viscosity [Pa.s]	Spacers	Hardness [Shore]	Water absorption [%]	Moisture permeability [g/m².24h]*	E'' peak [°C]	tan δ peak [°C]	Shear strength Glass/Glass [MPa]
3124	Light pink	270	20µ	D78	0,6	80	134	153	9,5
3124B	Light pink	220	10µ	D78	0,6	80	134	153	9,5
3124L	Light pink	300	6µ	D76	1,3	65	147	138	6,3
3124M	Light pink	170	6µ	D78	1,3	65	147	138	8,3
3125D	White	260	-	D75	1,7	3 (40°C)	119	135	5,0
3125F	White	24	-	D85	0,6	130	130	150	8,6

* : 150µm thick film at 80°C, 95%RH

UV + Heat curing Epoxy

	Color	Viscosity [Pa.s]	Hardness [Shore]	Young Modulus [Mpa]	Tg [°C]	CTE [ppm/°C]	Shear strength [MPa]							
							PC/PC	AC/AC	Glass/Glass	Glass/Alu	Glass/SUS	Glass / ZDC	Glass/PPS	Glass/LCP
3113B	White	15	D72	0.7	52	69	3.4	7.0	-	5.0	8.0	7.0	-	-
3114	Light grey	26	D80	19	50	30	-	-	7.7	-	-	6.2	4.8	3.5
3114B	Light grey	50	D82	6.9	47	31	-	-	3.8	-	-	4.2	8.1	3.4
3114F	Light grey	16	D75	2.3	45	34	-	-	7.0	-	8.3	7.8	4.2	3.1
3114G	Light yellow	9.2	D82	3.4	65	51	3.8	1.9	8.4	-	-	-	6.5	-

UV + Moisture curing Silicone

	Color	Viscosity [Pa.s]	Hardness [shore]	Elongation [%]	Tensile strength [MPa]	Shear Strength [MPa]					
						PC / PC	Glass / Cu	AC / AC	Glass/Glass	Glass/Fe	Glass/Alu
3161	Light yellow	3	A30	100	0.68	0.96	1.3	0.36	6.0	2.0	0.66
3163	Blue	12	A33	150	1.5	-	-	-	3.9	-	-
3164	Light white	50	A30	130	1.3	1.4	2.9	1.2	6.8	1.3	1.1
3164D	Light white	10	A32	140	1.0	2.6	-	2.9	4.0	-	0.6

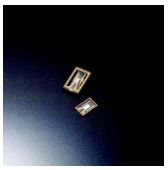
Visible Light curing resins

	Color	Viscosity [Pa.s]	Hardness [Shore]	Shear strength [MPa]													
				Glass/Glass	Glass/Acrylic	Glass/PC	Glass/LCP	Glass/Alu	Glass/SUS	Glass/PBT	Glass/PPS	PC/PC	Acrylic/Acrylic	Acrylic/PC	Acrylic/Alu	Acrylic/PPS	Acrylic/SUS
3170B	Clear	1.8	D70	8,0	-	-	3.2	8.0	6.0	-	4.9	5.0	3.0	-	-	-	-
3170D	Clear	37	D54	-	-	-	-	-	-	-	-	-	-	3.0	7.5	-	8.0
3170E	Clear	11.2	D44	-	-	-	-	-	-	-	-	-	-	-	-	2.1	-
3170F	Clear	18	D50	8.0	-	-	4.4	8.0	8.0	-	5.1	6.9	5.0	-	-	-	-
3170J	Clear	4.5	D10	-	5.6	4.7	5.4	4.9	7.6	3.1	5.5	4.5	4.0	-	-	-	-

UV for Camera Module assembly

	Color	Viscosity [Pa.s]	Shrinkage [%]	Hardness [Shore]	Young Modulus [GPa]	E'' peak [°C]	tan d peak [°C]	CTE [ppm/°C]	Shear strength Fe/Fe [MPa]
3140	Green	8	3	D85	2,4	104	121	60	17,0
3140C	Yellow	8	2,6	D86	3,1	107	118	58	18,0
3140E	White	640	4,8	-	4,1	86	108	44	-

3300 Series : Electro-Conductive Adhesives



The products in the ThreeBond 3300 series are conductive adhesives, each made up of a synthetic resin and a conductive filler containing metal such as silver, nickel, or carbon. They offer strong bonding to plastic, rubber, or ceramic, and can easily be used on assemblies that require soldering. They are widely used in producing printed circuits, bonding wire leads to electrodes, and bonding semiconductor elements and EMI parts. The series also includes anisotropically conductive adhesives that offer strong jointing of high-density multiterminal circuits such as LCDs, to meet requirements for smaller, denser, higher-precision electronic parts.

	Binder	Solvent	Viscosity [Pa.s]	Cuirng Conditions	Pencil Hardness	Volume Resistivity [Ohm.cm]
	Heat curing silver filled adhesives					
3301	Epoxy	-	110	120°C x 60min	9H	5 E-4
3301E	Epoxy	Ester	31	120°C x 60min	4H	1~2 E-4
3301F	Epoxy	Ester	23	120°C x 60min	4H	1~2 E-4
3301L	Epoxy	Ester	20	120°C x 60min	H~3H	3 E-4
3301M	Epoxy	Ester	70	120°C x 60min	7H~8H	1~3 E-4
3301U	Epoxy	Ester	40	120°C x 60min	3B	1.5 E-4
3301W	Epoxy	-	37	120°C x 60min	4H	1.6 E-4
3302	Urethane	Aromatic	15	120°C x 60min	B~3B	5~6 E-4
3302B	Urethane	Aromatic	15	120°C x 60min	5B~6B	5~6 E-4
3303B	Silicone	Aromatic	22	150°C x 30min	< 6B	3~4 E-4
3303G	Silicone	Aromatic	40	180°C x 60min	< 6B	3~4 E-4
3303M	Silicone	Alcohol	40	180°C x 60min	< 6B	2 E-4
3303N	Silicone	Alcohol	41	180°C x 60min	< 6B	2~3 E-4
3303P	Silicone	Aromatic	17	150°C x 60min	< 6B	2 E-4
3303R	Silicone	Aromatic	50	180°C x 60min	< 6B	2~3 E-4

	Binder	Solvent	Viscosity [Pa.s]	Cuirng Conditions	Pencil Hardness	Volume Resistivity [Ohm.cm]
	Carbon filled electro-conductive resin					
3315E	Styrene Elastomer	Toluene	600	80°C x 30min	20	4.3
	Coating materials					
3350B	Acrylic	Toluene, MEK	2.5	25°C x 24h	3H	2~3 E-4
3350C	Acrylic	Toluene, Alcohol	1.2	25°C x 24h		2 E-4

Anisotropic Conductive Paste (ACP)

	Binder	Solvent	Viscosity [Pa.s]	Fillers			Application
				Material	Size	Type	
3372C	Epoxy	-	20	Silver	5~10µ	Balls micro encapsulated	Flip Chip, COF, COB
3372E	Epoxy	-	14	Silver	5~10µm	Balls	Flip Chip, COF; COB
3373C	Silicone	Isophorone Toluene	75	Gold	30µm	Gold plated plastic balls	Flex/Flex, Flex /ITO
3373E	Silicone	Isophorone	95	Gold	30µm	Gold plated plastic balls	Flex/Flex, Flex /ITO
3373F	Silicone	Alcohol	60	Gold	30µm	Gold plated plastic balls	Flex/Flex, Flex /ITO

3700 Series : Heat Resistant Inorganic Adhesive

Heat-resistant inorganic adhesives, silicate-based or phosphoric-based, have been used for assemblies that will reach temperatures of over **1400°C**, but they are unsatisfactory in water resistance, dielectricity, airtightness, and workability. As a result, they are not widely used. ThreeBond 3732 is a brand-new heat-resistant inorganic adhesive, in which the binder is alkoxide. It is a one-part adhesive that cures at low temperature and foams very little, and therefore is very workable. After curing, it has excellent airtightness, resistance to water, and dielectricity ; therefore it makes many kinds of bonding possible for the first time. It can be used for filling and for relatively thick coating. Also the properties of the binder offer a wide variety of potential uses, for instance in paints and putties.

	Solvent	Viscosity [Pa.s]	Specific gravity	Temperature resistance limit [°C]	Heat conductivity [W/m.K]	Bending strength [Mpa]	Compressive strength [Mpa]	Volumic resistivity [Ohm.cm]	Chemical Resistance				
									Water (Boiling, 2h)	Water (Boiling, 2h)	Water (Boiling, 2h)	Water (Boiling, 2h)	Water (Boiling, 2h)
3732	Alcohol	11	3.0	> 1400	2.55	9.8	2.6	1×10^{12}	OK	OK	Cracks	OK	OK

5200 Series : Silicones for construction

This is a caulking agent that can be used for various purposes including joints for mortar and concrete, concrete blocks, U-shaped gutters, metal framed glass sliding doors and windows, and for bonding and sealing of pools, water tanks, sinks, etc.
It is a single component that cures by simply squeezing it from the container and forms a rubber-like elastic body. There are various grades of different materials available including silicone-based, and modified silicone based products.

	Coulor	Viscosity	Specific gravity	Hardness (Shore)	Elongation [%]	Tensile strength [MPa]	Shear strength [MPa]							
							Iron	Alu	Acrylic	ABS	PVC	Glass	Tile	Wood
5211	White	Paste	1.04	A23	500	2.5	1.1	1.3	1.1	1.1	1.1	1.3	1.2	0.9
5211B	Grey	Paste	1.04	A23	500	2.5	1.1	1.3	1.1	-	1.1	1.3	1.2	0.9
5211C	Clear	Paste	1.04	A23	500	2.5	1.1	1.3	1.1	-	1.1	1.3	1.2	0.9
5211D	Ivory	Paste	1.04	A23	500	2.5	1.1	1.3	1.1	-	1.1	1.3	1.2	0.9
5211E	Black	Paste	1.04	A23	500	2.5	1.1	1.3	1.1	-	1.1	1.3	1.2	0.9
5211F	Silver	Paste	1.04	A23	500	2.5	1.1	1.3	1.1	-	1.1	1.3	1.2	0.9
5222M	*Several*	450	1.40	A28	400	0.9	1.2	1.2	0.5	-	1.1	-	-	-
5223	Ivory	Paste	1.45	A30	700	2.5	-	1.8	-	1.1	-	1.8	-	-

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