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# KLEBER

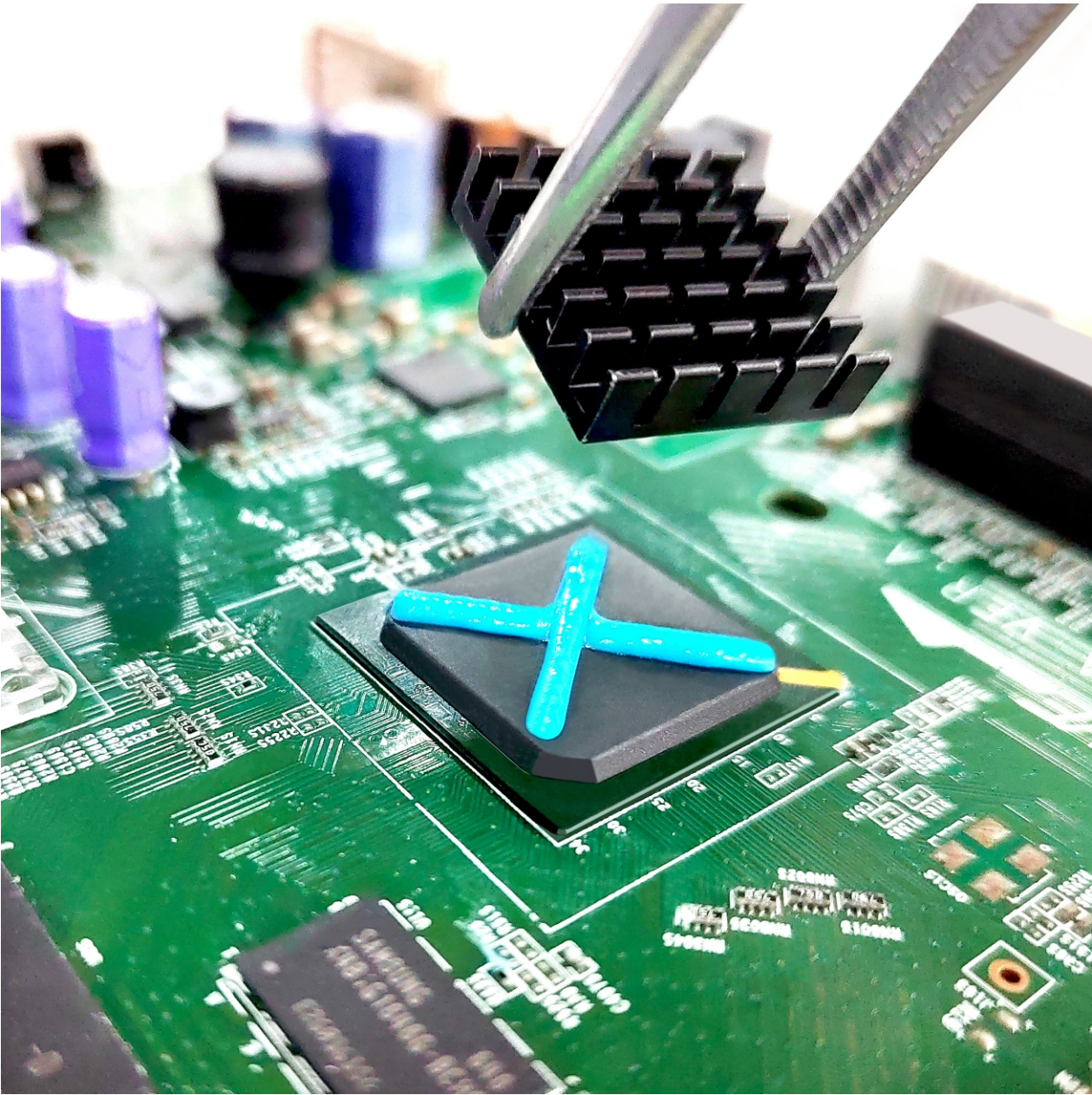
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# Adhesive and Potting Material

Product Solutions





# About US

## Kleber · Shanghai R&D Center



Shanghai Kleber New Material Technology Co., Ltd is a high-tech company specializing in the development, manufacturing and sales of thermal interface materials, EMI shielding/absorbing materials, adhesives and potting materials. Adhering to the business strategy of “Global Presence, Local Service” and relying on highly dedicated employees, Kleber always seeks to provide excellent customer experience from product development to customer delivery. With constant breakthrough and the improvement of organizational efficiency, Kleber provides customers around the world with one-stop solutions for adhesive, thermal interface material and EMI shielding material which is from design to final product application. Responding to the new material revolution triggered by intelligence, electrification and lightweighting in various industries including auto, telecom, new energy, artificial intelligence, aerospace and industrial control, Kleber takes “Innovating materials for a safer and smarter world” as our vision and “Dedicating to technical breakthroughs to offer superb thermal interface materials, EMI shielding/absorbing materials, adhesives and potting materials so that facilitates building green and intelligent life.” as our mission.

### Introduction to Adhesive and Potting Material

Kleber has a history of nearly ten years in the R & D and manufacturing of adhesive and encapsulant. As a supplier of epoxy, acrylic, silicone and polyurethane systems including adhesive and encapsulant, we can provide professional customized services according to the requirements of customers.

Our adhesive and encapsulant are widely used in automotive, medical, aerospace, industrial control and other conductive industries as structural bonding, heat conduction and sealing purposes. Especially in the fields of power battery system heat management and structural bonding, sensors, power, transformers and other important electronic/electrical equipments. Its excellent bonding performance can be used to replace the riveting and welding. If you have this requirement or a customized solution, Kleber will be your best choice.

### Chemical Category

Acrylic has the characteristics of rapid curing speed, low viscosity and can be cured by UV. Acrylic has a strong adhesion to metal and requires little surface treatment, therefore it is widely used in metal structural bonding. Besides, Acrylic can also be used to bond some plastics. Kleber acrylic structural adhesive has high shear strength, rapid curing speed at room temperature, excellent environment resistance and can also meet the needs of different thermal conductivity.

Epoxy has the characteristics of diversity, high strength and good adhesion. At the same time, epoxy has good resistance to chemical and high temperature, so it is widely used in the field of adhesive and potting. Benefits of the wide range of sources of raw materials, such products can be adjusted to match a variety of requirements and needs. We offer a variety of epoxy potting products, including Tg 210°C high temperature resistance, high hardness, with or without filler, thermal conductivity, or flame retardant. In addition, Kleber has a variety of high strength structural adhesive, including different curing speed and thermal conductivity for choice.

Polyurethane is characterized by low hardness, moderate strength, good elasticity, water resistance, shock resistance, excellent electrical insulation, no corrosion to electrical components and widely used in the field of adhesive and potting/encapsulant. When there is no requirement for high temperature resistance, polyurethane is regarded as the best substitute for silicone. In fact, polyurethane is known to be the most suitable material for low temperature applications, which can provide excellent protection for stress-sensitive electronics and act

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as a moisture proof. We offer polyurethane potting products with low viscosity ranging from soft to medium hardness, while offering products with different thermal conductivities depending on function to meet the needs of a variety of potting applications. In addition, polyurethane has good adhesion to coating metal, plastics, wood and other materials. Polyurethane adhesives with different curing speeds and thermal conductivities can be provided according to the requirements of the bonding process.

As one of the most widely used chemicals, silicone can maintain its inherent elasticity over a very wide range of temperature (-75°C to +200°C). Silicone protects sensitive electronic components and modules, providing key properties such as flame retardant, high temperature resistance and permanent elasticity. Kleber silicone gap filler and potting products can provide different thermal conductivities according to functional requirements.



### Professional Solutions

Kleber not only provides high-quality products, our professional engineers will work with you to analyze the bonding process and develop the most suitable bonding solution for you. We do cost assessment analysis to help you quantify cost savings and ROI, select the most appropriate product for your application and configure the appropriate metering/mixing equipment.





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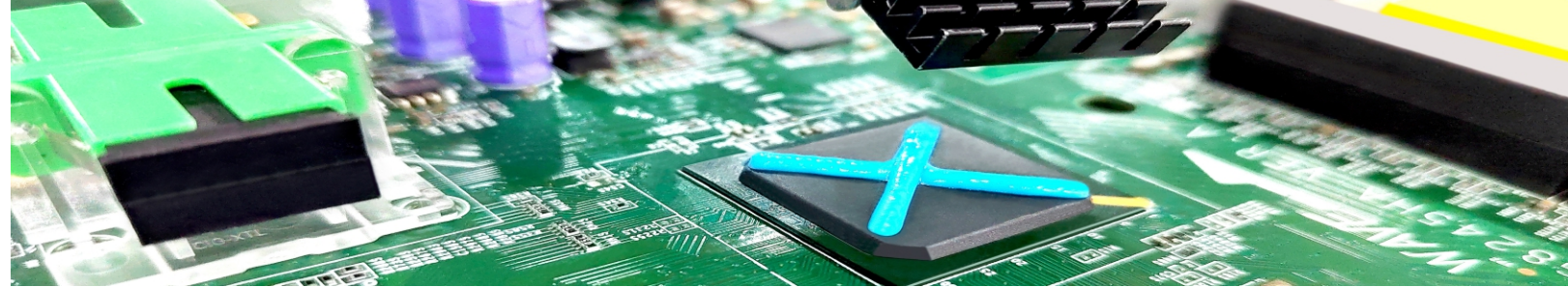
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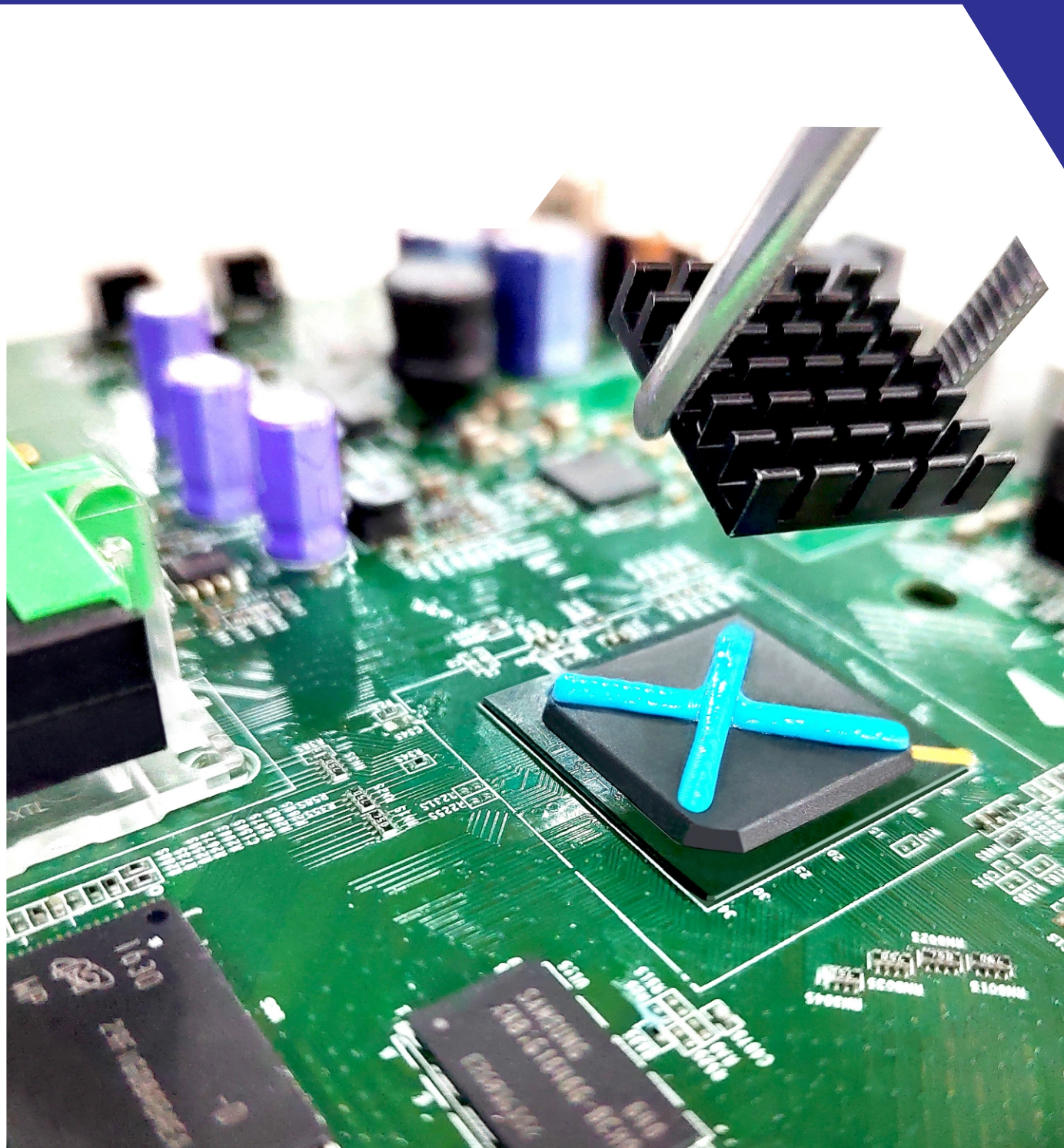
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## Structural Adhesive



We always regard it as our top priority to provide our customers with professional structural bonding solutions.

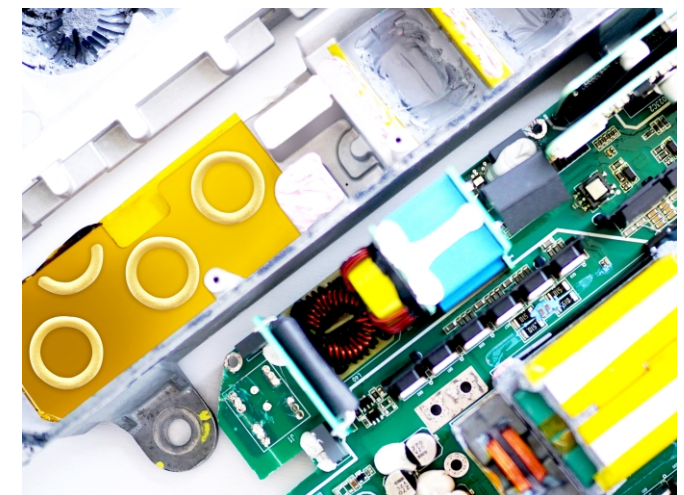
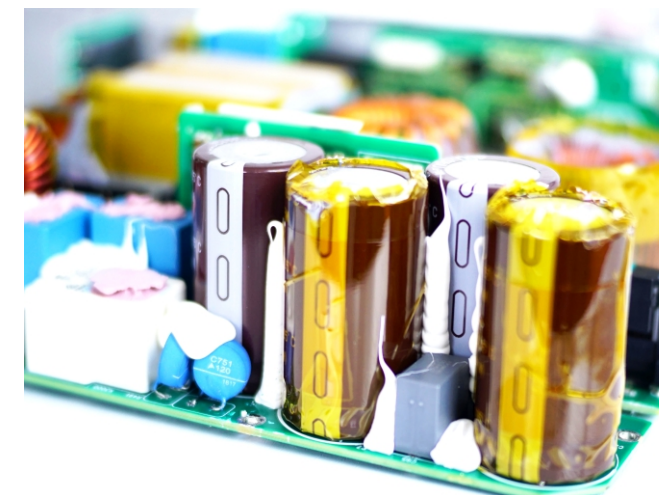
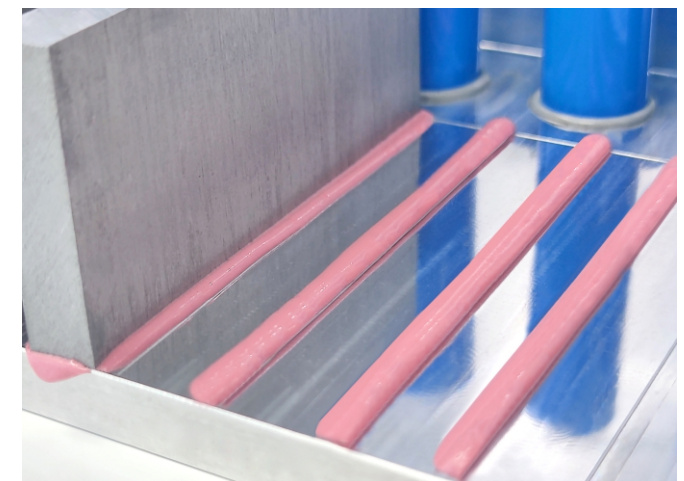
With more than 10 years of experience in developing and producing structural adhesives, we have a rich product range including acrylic adhesive, epoxy adhesive and polyurethane adhesive. On the premise of ensuring design flexibility and total cost saving, the appearance, strength and durability of products can be greatly improved. Compared with traditional fastening methods such as riveting, welding and tape, Kleber structural adhesive eliminates the cost of metal material treatment and repair, and improves the assembly process of various composite materials, metal and plastics.

### Chemical Category

Acrylic is mainly used in metal structural bonding. Acrylic is highly corrosive and requires less surface treatment. It can also be used for plastics bonding, but it should be tested for applicability.

Polyurethane adhesive is ideal choice for bonding plastics, composites, wood and foams. Polyurethane has good adhesion to pretreated metals, so it is commonly used in metal bonding applications, where metals require primer, paint, powder coating or electrophoretic paint.

Epoxy usually has excellent strength and chemical resistance and can be used for bonding materials such as metals, plastics, composites, concrete, wood and foams.





# KB-XERM AA1003

## Thermally Conductive Acrylic Structural Adhesive

KLEBER KB-XERM AA1003 is a two-component acrylic adhesive designed to provide both thermal conductivity and adhesion to electronic applications. It can be cured in short time without primer at room temperature and produce a flame retardant material.

### Features and Benefit

- Fast curable at room temperature
- High thermal conductivity
- Reliable bonding
- Easy to mix and apply
- Environmentally resistant
- Non-flammable

### Application

- Power modules
- Routers and communication station
- Security system

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 4-10°C in original unopened container. Do not return dispensed adhesive to the original container.

### Typical Properties

Properties	Unit	AA1003 Part A	AA1003 Part B	Mixed
Appearance	-	Blue paste	Off-white paste	Blue paste
Viscosity @ 25°C	Pa·s	200-400	200-400	-
Specific gravity	g/cm³	1.65	1.75	1.67
Mix ratio by volume	-	4	1	-
Working time @ 25°C	min	-	-	3
Time to handling strength@ 25°C	min	-	-	6-10
Curing time @ 25°C	h	-	-	2-3
Typical Cured Properties				
Properties	Unit	Test Method		Value
Thermal conductivity	W/m·K	ASTM D5470		1.0
Hardness	shoreD	ASTM D2240		60
Lap shear strength, aluminum@ 25°C	MPa	ASTM D1002		≥10
Glass transition temperature	°C	DMA		80
Dielectric strength	KV/mm	ASTM D149		18

### Typical Properties

Properties	Unit	UA2030LD Part A	UA2030LD Part B	Mixed
Appearance	-	Red paste	White paste	Pink paste
Viscosity @ 25°C	Pa·s	300-500	250-350	300
Specific gravity	g/cm³	1.98	2.02	2.00
Mix ratio by weight	-	1	1.2	-
Mix ratio by volume	-	1	1	-
Working time @ 25°C	min	-	-	30-40
Time to handling strength @ 25°C	h	-	-	2-3
Curing time @ 25°C	h	-	-	24
Typical Cured Properties				
Properties	Unit	Test Method		Value
Thermal conductivity	W/m·K	ASTM D5470		2.0
Hardness	shore D	ASTM D2240		70
Lap shear strength, aluminum @ 25°C	MPa	ASTM D1002		≥10
Tensile strength	MPa	ASTM D638		≥8
Elongation at break	%	ASTM D638		12
Volume resistivity @ 25°C	ohm·cm	ASTM D257		1x10 <sup>14</sup>
Dielectric strength	KV/mm	ASTM D149		20

Other Optional Products	
UA1530	1.5W/mK,bonding strength 7-10MPa,60D,resistance to vertical flow, Modulus:400MPa



# KB-XERM UA2030 LD

## Thermally Conductive Polyurethane Structural Adhesive

KLEBER KB-XERM UA2030 LD is a two-component polyurethane adhesive designed to provide both high thermal conductivity and adhesion to electronic applications. It can be cured at room temperature and produce a flame retardant material with medium hardness.

### Features and Benefit

- Room or elevated temperature cure
- Low exotherm and stress during curing
- High thermal conductivity
- Reliable bonding
- Easy to mix and apply
- Environmentally resistant

### Application

- Battery package assembly
- Power modules

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25 °C in original unopened container. After opening, protect each component from excessive moisture by using dry nitrogen as an inert cover.

### Operation Process

- Mixing: mix the two parts at a ratio of 4:1 by volume, handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates and apply the mixed adhesive to bond surfaces, join the parts within short operating time and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive can reach handling strength in 6-8 minutes at room temperature, and achieve full strength in 2-3 hours. The curing can be indicated by visual color change.

### Operation Process

- Mixing: mix the two parts at a ratio of 1:1 by volume or 1:1.02 by weight. Handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates with dry rag or solvents, and apply the mixed adhesive, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will reach full cure in 7 days at room temperature. Cure can be accelerated with elevated temperature .





# KB–XERM EA3030

## Thermally Conductive Epoxy Structural Adhesive

KLEBER KB-XERM EA3030 is a two-component , thermally conductive epoxy adhesive designed for electronic or general applications that require both reliable bonding and heat sink. It can be cured at room or elevated temperature and produces a flame retardant material.

### Features and Benefit

- Room or elevated temperature cure
- Low exotherm and stress during curing
- High thermal conductivity
- high temperature resistance
- Non-flammable

### Application

- Battery assembly
- Automotive
- Communication components
- RC power system
- UAV power system

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 15-30°C in original unopened container.



### Typical Properties

Properties	Unit	EA3030 Part A	EA3030 Part B	Mixed
Appearance	-	Blue paste	white paste	Light blue paste
Viscosity @ 25°C,10s-1	Pa·s	50-200	50-200	50–200
Specific gravity	g/cm³	2.94	2.81	2.87
Mix ratio by volume	-	1	1	-
Mix ratio by weight	-	100	95	-
Working time @ 25°C	min	-	-	20-30
Time to handling strength@ 25°C	h	-	-	3-5
Curing time @ 25°C	day	-	-	2-3
Curing time @ 80°C	h	-	-	1-2

Typical Cured Properties			
Properties	Unit	Test Method	Value
Thermal conductivity	W/m · K	ASTM D5470	3.0
Hardness	shoreD	ASTM D2240	85
Lap shear strength, aluminum@ 25°C	Mpa	ASTM D1002	> 11
Tensile strength	Mpa	ASTM D638	20
Elongation at break	%	ASTM D638	1
Glass transition temperature	°C	DMA	80
Dielectric strength	KV/mm	ASTM D149	14

Other Optional Products	
EA1060	1.0W/mK,Lap Shear Strength,Aluminum@ 25°C > 11,good toughness,85D,Non-flammable
EA2030	2.0W/mK,Lap Shear Strength,Aluminum@ 25°C > 12, Non-flammable

### Operation Process

- Mixing:mix the two parts with ratio of 1:1 by volume, Handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying:clean the substrates and apply the mixed adhesive, join the parts and add enough pressure until the handling strength is reached.
- Curing:the mixed adhesive will reach full cure in 2-3 days at room temperature. Cure can be accelerated with elevated temperature like 80°C for 1-2 hours, the bonding performance can be improved by higher temperature curing.

### Typical Properties

Properties	Unit	AA107 Part A	AA107 Part B	Mixed
Appearance	-	Off-white paste	Grey paste	Grey paste
Viscosity @ 25°C	Pa·s	100-300	100-300	100-300
Specific gravity	g/cm³	1.04	1.56	-
Mix ratio by volume	-	4	1	-
Working time @ 25°C	min	-	-	7-9
Time to handling strength@ 25°C	min	-	-	24-28

Typical Cured Properties			
Properties	Unit	Test Method	Value
Lap shear strength, aluminum @ 25°C	Mpa	ASTM D1002	18
Lap shear strength,FRP @ 25°C	Mpa	ASTM D1002	8.5
T-peel strength, aluminum @ 25°C	N/mm	ASTM D1876	7.0
Tensile strength	Mpa	ASTM D638	19
Elongation at break	%	ASTM D 638	15-20
Glass transition temperature	°C	DMA	90

Other Optional Products	
AA207	High bonding strength, good adhesion to various plastics and engineering plastics, and can also bond metals.
AA230	Good adhesion performance, oil resistant surface adhesion, can bond materials such as cold-rolled steel, galvanized steel plates (electroplated zinc, hot-dip zinc), and aluminum plates. Applied to car doors, sunroofs, front and rear engine covers, fenders, etc.
AA510	It has the characteristics of fast curing speed, strong adhesion, and low shrinkage. Can be used to bond different materials such as aluminum, galvanized steel, cold-rolled steel, engineering plastics, etc.

### Operation Process

- Mixing: mix the two parts at a ratio of 4:1 by volume, handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates and apply the mixed adhesive to bond surfaces, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will reach full cure in 24 hours at room temperature. Cure can be accelerated with elevated temperature.



# KB–XBOND AA107

## Acrylic Structural Adhesive

KB-XBOND AA107 is a two-component acrylic adhesive designed for general application. It can provide excellent bonding to metal materials. The adhesive can be cured rapidly at room temperature.

### Features and Benefits

- Good adhesion for wide application
- Excellent impact resistance
- Reliable for environment test

### Application

- Automotive
- Bus
- Train

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored under 25°C in original unopened container.Storage temperatures of 40-50°F (4-10°C) are recommended. If stored cold, allow product to return to room temperature before using. Protect from exposure to direct sunlight.



# KB-XBOND AA302

## Acrylic Structural Adhesive

KB-XBOND AA302 is a low viscosity, two-component acrylic adhesive with excellent adhesion to metal materials and engineering plastics. The product can cure quickly at room temperature. Component B contains a photoinitiator, which can be irradiated by UV to promote surface drying.

### Features and Benefit

- Good adhesion for wide application
- Excellent bonding properties
- Resistance to environmental aging

### Application

- Cylindrical battery water cooling tape bonding

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored under 15°C-25 °C in original unopened container. Storage temperatures of 40-50°F (4-10°C) are recommended. If stored cold, allow product to return to room temperature before using. Protect from exposure to direct sunlight.



### Typical Properties

Properties	Unit	AA302 Part A	AA302 Part B	Mixed
Appearance	-	Yellow	White	Lightyellow
Viscosity @ 25°C	Pa·s	40-150	3000-18000	-
Specific gravity	g/cm³	0.94	1.12	-
Mix ratio by volume	-	10	1	-
Working time @ 25°C	min	-	-	1-2
Time to 500psi @25°C	min	-	-	5-6
Curing time @25°C	h	-	-	3
Typical Cured Properties				
Properties	Unit	Test Method		Value
Lap shear strength, aluminum@25°C	Mpa	ASTM D1002		≥11
Tensile strength	MPa	ASTM D638		≥14
Elongation at break	%	ASTM D638		25-55
Glass transition temperature	°C	DMA		100

### Operation Process

- Mixing: mix the two parts at a ratio of 10:1 by volume, handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates and apply the mixed adhesive to bond surfaces, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will rapidly curing at room temperature. For aluminum substrate, the bonding strength is greater than 7 MPa within 10 minutes.

### Typical Properties

Properties	Unit	UA307 Part A	UA307 Part B	Mixed
Appearance	-	Black liquid	Dark brown liquid	Black paste
Viscosity @ 25°C	cps	5000-10000	5000-10000	-
Specific gravity	g/cm³	1.40	1.25	1.33
Mix ratio by volume	-	1	1	-
Working time @ 25°C	min	-	-	6-8
Time to handle strength @ 25°C	h	-	-	1-2
Typical Cured Properties				
Properties	Unit	Test Method		Value
Lap shear strength, CFRP @ 25°C	Mpa	ASTM D1002		13
Lap shear strength, SMC @ 25°C	Mpa	ASTM D1002		SB
Lap shear strength, PC/ABS @ 25°C	Mpa	ASTM D1002		>8
Tensile strength	Mpa	ASTM D638		12
Elongation at streak	%	ASTM D638		120
Glass transition temperature	°C	DMA		40

Other Optional Products	
UA310	Operation time 7-10 minutes, aluminum substrate bonding shear strength ≥ 10MPa, blue film bonding ≥ 1.3 or blue film damage
UA340	Operating time of 30-40 minutes, aluminum substrate bonding shear strength ≥ 10MPa, blue film bonding ≥ 1.3 or blue film damage

### Operation Process

- Mixing: mix the two parts at a ratio of 1:1 by volume. Handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates and apply the mixed adhesive to bond surfaces, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will reach cure in 24 hours at room temperature. Cure can be accelerated with elevated temperature.



# KB-XBOND UA307

## Polyurethane Structural Adhesive

KLEBER KB-XBOND UA307 is a two-component urethane adhesive designed for general application. It can provide excellent bonding to FRP, SMC and other plastic materials with little surface treatment, The adhesive can be cured at room or elevated temperature.

### Features and Benefits

- Good adhesion for wide application
- Reliable for environment test

### Application

- Automotive
- Bus
- Train

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 15-30 °C in original unopened container. After opening, protect each component from excessive moisture by using dry nitrogen as an inert cover.



# KB—XBOND UA407

## Polyurethane Structural Adhesive

KLEBER KB-XBOND UA407 is a two-component urethane adhesive designed for general application. It can provide excellent bonding to FRP, SMC and other plastic materials with little surface treatment, The adhesive can be cured at room or elevated temperature.

### Features and Benefits

- Good adhesion for wide application
- Reliable for environment test

### Application

- Automotive
- Bus
- Train

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 15-30 °C in original unopened container. After opening, protect each component from excessive moisture by using dry nitrogen as an inert cover.

### Typical Properties

Properties	Unit	UA407 Part A	UA407 Part B	Mixed
Appearance	-	Black paste	Brown paste	Black paste
Viscosity @ 25°C	cps	200-500	400-800	-
Specific gravity	g/cm³	1.25	1.55	1.40
Mix ratio by volume	-	1	1	-
Working time @ 25°C	min	-	-	6-8
Time to handling strength@ 25°C	h	-	-	1-2
Typical Cured Properties				
Properties	Unit	Test Method		Value
Lap shear strength, CFRP @ 25°C	MPa	ASTM D1002		14
Lap shear strength, SMC @ 25°C	MPa	ASTM D1002		SB
Lap shear strength, PC/ABS @ 25°C	MPa	ASTM D1002		>8
Tensile strength	MPa	ASTM D638		17
Elongation at break	%	ASTM D638		50
Glass transition temperature	°C	DMA		40

### Typical Properties

Properties	Unit	EA240 Part A	EA240 Part B	Mixed
Appearance	-	white paste	Gray paste	Gray paste
Viscosity @ 25°C	Pa·s	400-600	200-400	-
Specific gravity	g/cm³	1.55	1.27	1.40
Mix ratio by weight	-	1.2	1	-
Mix ratio by volume	-	1	1	-
Time to handling strength@ 25°C	min	-	-	20-25
Working time @ 25°C	h	-	-	2-4
Curing time @ 25°C	h	-	-	24
Curing time @ 80°C	h	-	-	1
Typical Cured Properties				
Properties	Unit	Test Method		Value
Lap shear strength, aluminum@ 25°C	MPa	ASTM D1002		10
Lap shear strength, steel @ 25°C	MPa	ASTM D1002		12
Lap shear strength, SMC @ 25°C	MPa	ASTM D1002		SB
Tensile strength	MPa	ASTM D638		25
Elongation at break	%	ASTM D638		2
Glass transition temperature	°C	DMA		80

Other Optional Products	
EA280	Long operating time, high strength, two-component structural adhesive
EA540	Two-component,high strength,volume mixing ratio 1 : 1,bonding strength 15-20MPa,good toughness, shock resistance



# KB—XBOND EA240

## Epoxy Structural Adhesive

KB-XBOND EA240 is a two-component epoxy adhesive designed for general application. It can provide excellent bonding to metal, rubber, plastics and other materials, The adhesive can be cured at room or elevated temperature.

### Features and Benefits

- Good adhesion for wide application
- High impact resistance
- Reliable for environment test
- Resistant to chemicals and high temperature

### Application

- Automotive
- Bus
- Train

### Shelf Life/Storage

- Shelf life of each component is 1 year from date of manufacture when stored at 15-30°C in original unopened container.

### Operation Process

- Mixing: mix the two parts at a ratio of 1:1 by volume. Handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates and apply the mixed adhesive to bond surfaces, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will reach cure in 24 hours at room temperature. Cure can be accelerated with elevated temperature.

### Operation Process

- Mixing: mix the two parts at a ratio of 1:1 by volume, handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates and apply the mixed adhesive to bond surfaces, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will reach cure in 24 hours at room temperature. Cure can be accelerated with elevated temperature.





# KB—XBOND EA360

## Epoxy Structural Adhesive

KB-XBOND EA360 is a two-component epoxy adhesive designed for general application. It can provide excellent bonding to metal, rubber, plastics and other materials. The adhesive can be cured at elevated temperature.

### Features and Benefit

- Good adhesion for wide application
- High impact resistance
- Reliable for environment test
- Resistant to chemicals and high temperature

### Application

- Industrial
- Mechanical assembly

### Shelf Life/Storage

- Shelf life of each component is 1 year from date of manufacture when stored at 15-30°C in original unopened container.

### Typical Properties

Properties	Unit	EA360 Part A	EA360 Part B	Mixed
Appearance	-	White paste	Black paste	Graypaste
Viscosity @ 25°C	Pa·s	180	100	100-150
Specific gravity	g/cm³	1.42	1.33	1.40
Mix ratio by weight	-	2.1	1	-
Mix ratio by volume	-	2	1	-
Time to handling strength@ 25°C	min	-	-	60
Working time @ 25°C	h	-	-	6-8
Curing time @ 80°C	min	-	-	60
Typical Cured Properties				
Properties	Unit	Test Method		Value
Hardness	Shore D	ASTM D2240		80±5
Lap shear strength, aluminum@25°C	MPa	ASTM D1002		16
Tensile strength	MPa	ASTM D638		20
Elongation at break	%	ASTM D638		1-2
Glass transition temperature	°C	DMA		120

### Typical Properties

Properties	Unit	EA1040 RW Part A	EA1040 RW Part B	Mixed
Appearance	-	White	Blue	Blue
Viscosity @ 25°C	Pa·s	30	50	40
Specific gravity	-	1.21	1.29	1.25
Mix ratio by volume	-	1	1	-
Working time @ 25°C	min	-	-	6-12
Time to handling strength @25°C	min	-	-	30-40
Curing time @ 25°C	h			3-3.5
Typical Cured Properties				
Properties	Unit	Test Method		Value
Hardness	Shore D	ASTM D2240		89
Tensile strength	Mpa	ASTM D638		21



# KB—XBOND EA1040 RW

## Epoxy Structural Adhesive

KLEBER KB-XBOND EA1040 RW is a two-component epoxy adhesive designed for cutting and grinding processes in monocrystalline silicon, semiconductors, and related materials. It can be applied through either manual dispensing or automated bonding.

### Features and Benefits

- Excellent bonding performance
- High strength and high hardness
- Low odor
- Decomposable

### Application

- Optoelectronics
- Semiconductors

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 15-25°C in original unopened container.

### Operation Process

- Mixing: mix the two parts at a ratio of 2:1 by volume(100:48 by weight), handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates and apply the mixed adhesive to bond surfaces, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will reach cure in 24 hours at room temperature. Cure can be accelerated with elevated temperature.

### Operation Process

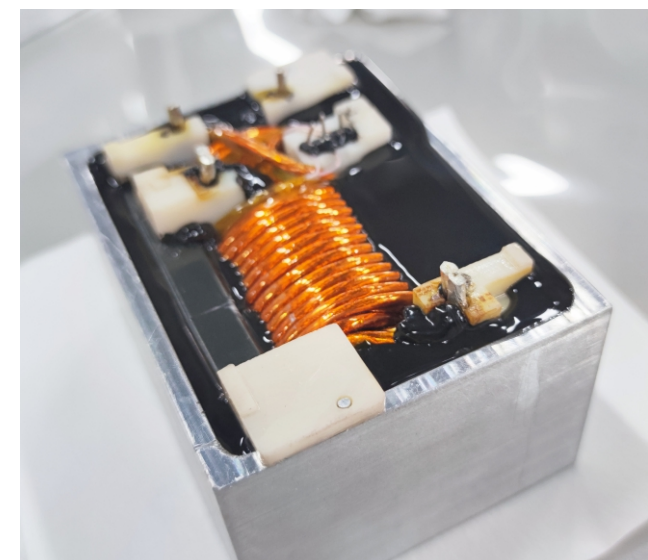
- Mixing: Mix the two parts with ratio of 1:1 by volume. Handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: Remove oil, grease, dust, and other contaminants from the substrate surface, then apply the mixed adhesive to the substrate.
- Curing: The mixed adhesive achieves full cure at room temperature within 3 to 3.5 hours.
- Debonding: Immerse in a debonding agent and maintain at 80°C for a minimum of 20 minutes.



## Encapsulant/Potting



We can provide all kinds of epoxy, silicone and polyurethane potting materials.



### Epoxy Potting Adhesive

Epoxy has the characteristics of diversity, high strength and good adhesion and is widely used in the field of adhesives and potting. Besides, epoxy has good resistance to chemical and high temperature. Benefits of the wide range of sources of raw materials, such products can be adjusted to match different requirements and needs. We can offer a series of epoxy potting products with different hardness, Tg, thermal conductivity and flame retardation.

### Polyurethane Potting Adhesive

When there is no requirement for high temperature resistance, polyurethane is regarded as the best substitute for silicone. Polyurethane is known to be the most suitable material for low temperature applications, which can provide excellent protection for stress-sensitive electronics and act as a water proof. We offer polyurethane potting products with low viscosity ranging from soft to medium hardness to meet different needs of customers.

Epoxy potting: UL certified, low modulus, high temperature resistance, high thermal conductivity. It is used for general potting and potting of power module, magnetic coil and various kinds of sensors.

Silicone potting: UL certified, low modulus, low viscosity, high thermal conductivity (0.8-4w/mk). It is used for general potting, power module potting, all kinds of sensor potting.

Polyurethane potting: suitable for all kinds of electronic and electrical products, power module and power battery, etc.



### Silicone Potting Adhesive

With the rapid development of 5G intelligent terminals and new energy vehicles, the demand for high-performance silicone potting is increasing rapidly at the same time. Silicone can protect sensitive electronic components and modules, and has the characteristics of low stress, high temperature resistance and flame retardant. In addition, the operation process of silicone is simple, and it is detachable and easy to repair. Kleber can offer a series of silicone products with different hardness (from shore 00 to shore A) and thermal conductivity according to the requirements of customers.



# KB–XERM UE0730

## Thermally Conductive Polyurethane Potting/Encapsulant

KLEBER KB-XERM UE0730 is a two-component urethane encapsulant designed for electronic applications. It can cures at room temperature to provide a thermally conductive and flame retardant material.

### Features and Benefits

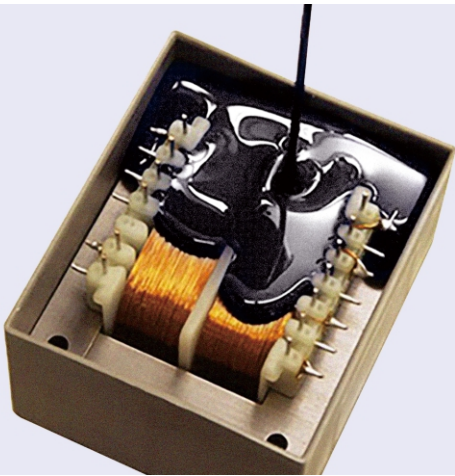
- Room or elevated temperature cure
- Low viscosity and easy to apply
- Thermal conductivity
- Environmentally resistant
- Non-flammable

### Application

- On board charger
- Battery assembly
- Power modules

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25°C in original unopened container.Part A side container must be periodically inverted to prevent settling.After opening, protect each component from excessive moisture by using dry nitrogen as an inert cover.



### Typical Properties

Properties	Unit	UE0730 Part A	UE0730 Part B	Mixed
Appearance	-	Black liquid	Brown liquid	Black liquid
Viscosity @25°C	cps	6000-8000	100-200	3000-5000
Specific gravity	g/cm³	1.50	1.21	1.45
Mix ratio by weight	-	5	1	-
Mix ratio by volume	-	4	1	-
Working life @25°C	min	-	-	20-30
Gel time @25°C	h	-	-	1-2
Curing time @25°C	h	-	-	24
Curing time @80°C	min	-	-	30

Typical Cured Properties			
Properties	Unit	Test Method	Value
Thermal conductivity	W/m-K	ASTM D5470	0.7
Hardness	Shore A	ASTM D2240	85
Tensile strength	MPa	ASTM D638	5
Elongation at break	%	ASTM D638	50
Volume resistivity @ 25°C	ohm-cm	ASTM D257	1x10 <sup>14</sup>
Dielectric strength	KV/mm	ASTM D149	25

Other Optional Products	
UE0730S	Low hardness, Shore A 30, 0.7W/mK
UE0830	Low viscosity 2000cps, hardness adjustable
UE1030	Thermal Conductivity: 1.0W/mK, Shore A 90

### Operation Process

- Mixing and apply: Thoroughly stir each component prior to use. Mix the resin with hardener at a ratio of 5:1 by weight (4:1, by volume) with manual or automatic mix equipment. Vacuum system is recommended to avoid any air entrapment during the mixing and applying.
- Curing: the mixed encapsulant can be cured for 30 minutes at 80°C, or 24 hours at room temperature. Avoid applying to substrates containing inhibitors like amines, sulfuer or tin salts.

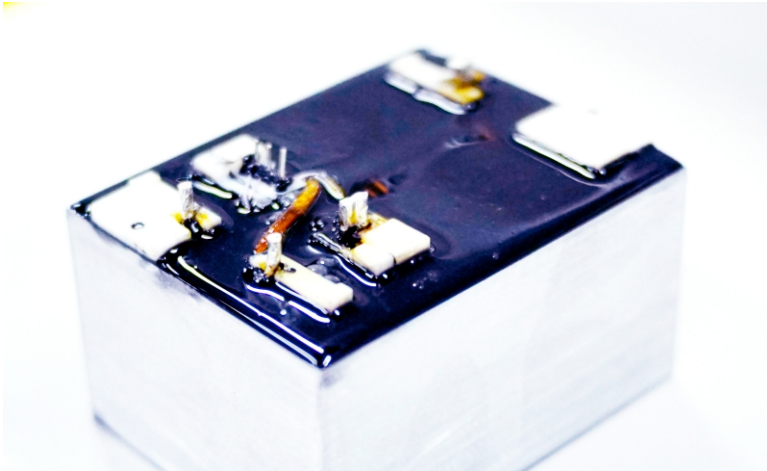
### Typical Properties

Properties	Unit	UE0805 Part A	UE0805 Part B	Mixed
Appearance	-	Black liquid	Brown liquid	Black liquid
Viscosity @ 25°C	cps	10000-12000	4000-5000	6000-8000
Specific gravity	g/cm³	1.54	1.40	1.50
Mix ratio by weight	-	100	23	-
Mix ratio by volume	-	100	25	-
Working life @ 25°C	min	-	-	3-5
Gel time @ 25°C	min	-	-	15
Curing time @25°C	h	-	-	24
Curing time @80°C	min	-	-	30

Typical Cured Properties			
Properties	Unit	Test Method	Value
Thermal conductivity	W/m-K	ASTM D5470	0.8
Hardness	Shore A	ASTM D2240	85
Volume resistivity @ 25°C	Ohm-cm	ASTM D257	1x10 <sup>14</sup>
Tensile strength	MPa	ASTM D638	5
Elongation at break	%	ASTM D638	40
Dielectric strength	kV/mm	ASTM D149	20

### Operation Process

- Mixing: mix the two parts at a ratio of 4:1 by volume or 100:23 by weight. Handheld cartridges or automatic dispense are recommended for accurately mixing.
- Applying: clean the substrates with dry rag or solvents, and apply the mixed adhesive, join the parts and add enough pressure until the handling strength is reached.
- Curing: the mixed adhesive will reach full cure in 7 days at room temperature. Cure can be accelerated with elevated temperature like 80°C, 30min.



# KB–XERM UE0805

## Thermally Conductive Polyurethane Potting/Encapsulant

KLEBER KB-XERM UE0805 is a two-component urethane encapsulant designed for electronic applications. It can cures at room temperature to provide a thermally conductive and flame retardant material.

### Features and Benefits

- Room or elevated temperature cure
- Thermally conductivity
- Easy to mix and apply
- Environmentally resistant
- Non-flammable

### Application

- On board charger
- Battery assembly
- Power modules

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25 °C in original unopened container. After opening, protect each component from excessive moisture by using dry nitrogen as an inert cover.



# KB–XERM EP1360/D25

## Thermally Conductive Epoxy Potting/Encapsulant

KLEBER KB-XERM EP1360/D25 is a two-component epoxy encapsulant material designed for electronic applications. It can be cured at room temperature or quickly at higher temperatures to provide thermal conductivity and bonding.

### Features and Benefits

- Excellent Thermal conductivity
- Flowable and easy to apply
- Reliable for environment test
- Wide temperature range (-40°C~125 °C)

### Application

- Heat pipe bonding

### Shelf Life/Storage

- Shelf life of each component is 1 year from date of manufacture when stored at 15-30°C in original unopened container.

### Typical Properties

Properties	Unit	EP1360/D25 Part A	EP1360/D25 Part B	Mixed
Appearance	-	Grey liquid	Transparency liquid	Grey liquid
Viscosity @ 25°C	cps	50000-70000	50-150	3000-5000
Specific gravity	g/cm³	2.00	1.00	1.82
Mix ratio by weight	-	10	1	-
Working life @ 25°C	min	-	-	40-60
Gel time @ 25°C	h	-	-	2
Curing time @ 25°C	h	-	-	24
Curing time@ 65°C	min	-	-	45-50
Curing time@ 125°C	min	-	-	15-20

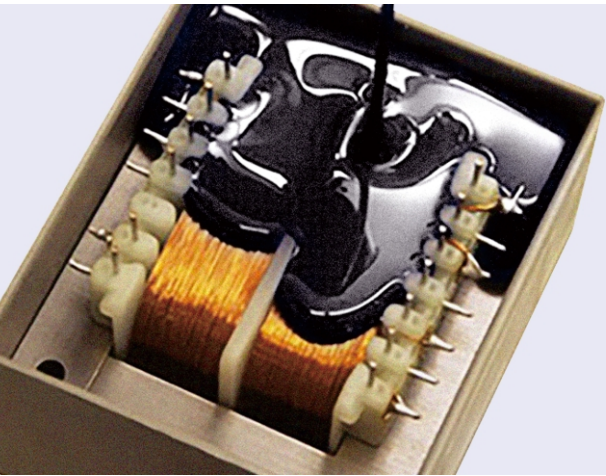
Typical Cured Properties			
Properties	Unit	Test Method	Value
Thermal conductivity	W/m·K	ASTM D5470	1.3
Hardness	Shore D	ASTM D2240	84
Lap shear strength, aluminum@ 25°C	MPa	ASTM D1002	14
Tensile strength	MPa	ASTM D638	32
Elongation at break	%	ASTM D638	3
Glass transition temperature	°C	DMA	65

Other Optional Products	
EP0640	General purpose,viscosity 5000cps,0.6W/mK,Non-flammable, ShoreD 75
EP2045	Thermal Conductivity 2.0W/mK,low stress, Non-flammable, ShoreD 80
EP4060/D25	High thermal conductivity,viscosity 4000cps,good adhesion

### Typical Properties

Properties	Unit	EP0640 D Part A	EP0640 D Part B	Mixed
Appearance	-	Black liquid	Transparent liquid	Black liquid
Viscosity @ 25°C	cps	10000-30000	50-150	1000-3000
Specific gravity	g/cm³	1.64	1.01	1.50
Mix ratio by weight	-	100	17	-
Mix ratio by volume	-	100	28	-
Working life @ 25°C	min	-	-	30-40
Gel time @ 25°C	h	-	-	2-3
Curing time@ 25°C	h	-	-	24
Curing time@ 120°C	min	-	-	30-40

Typical Cured Properties			
Properties	Unit	Test Method	Value
Thermal conductivity	W/m·K	ASTM D5470	0.6
Hardness	Shore D	ASTM D2240	80
Tensile strength	MPa	ASTM D638	35
Elongation at break	%	ASTM D638	3
Glass transition temperature	°C	DMA	80
Volume resistivity @ 25°C	ohm-cm	ASTM D257	1x10 <sup>14</sup>
Dielectric strength	kV/mm	ASTM D149	18



# KB–XERM EP0640 D

## Thermally Conductive Epoxy Potting/Encapsulant

KLEBER KB-XERM EP0640 D is a two-component epoxy encapsulant material designed for electronic applications. It can cure at room temperature or elevated temperature to provide a thermally conductive and flame retardant material.

### Features and Benefits

- Flowable and easy to apply
- Good toughness
- Excellent chemical resistance
- Reliable for environment test
- High temperature resistance
- Non-flammable

### Application

- Battery package assembly
- Communication electronics

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 15-30°C in original unopened container.





# KB–XERM SE4030 M

## Thermally Conductive Silicone Potting/Encapsulant

KLEBER KB-XERM SE4030 M is a two-component silicone encapsulant designed to provide excellent thermal conductivity for electrical/electronic encapsulating applications, at the same time to provide a certain protection.

### Features and Benefits

- Room or elevated temperature cure
- Low exotherm and stress
- Excellent thermal conductivity
- High temperature resistance
- Non-flammable

### Application

- On board charger
- Power modules
- Automotive
- Communication components

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25°C in original unopened container. The packaging container should be inverted periodically to reduce settlement.



### Typical Properties

Properties	Unit	SE4030 M Part A	SE4030 M Part B	Mixed
Appearance	-	Pink liquid	White liquid	Pink liquid
Viscosity @ 25°C	cps	8000-10000	8000-10000	8000-10000
Specific gravity	g/cm³	3.20	3.20	3.20
Mix ratio by volume	-	1	1	-
Mix ratio by weight	-	1	1	-
Operating time @ 25°C	min	-	-	30
Gel time @ 80°C	min	-	-	5-10
Curing time @ 25°C	h	-	-	24
Curing time @80°C	min	-	-	30

Typical Cured Properties			
Properties	Unit	Test Method	Value
Thermal conductivity	W/m·K	ASTM D5470	4.0
Hardness	Shore 00	ASTM D2240	60±5
Tensile strength	MPa	ASTM D638	0.15
Elongation at break	%	ASTM D638	20-40
Volume resistivity @ 25°C	ohm-cm	ASTM D257	1x10 <sup>13</sup>
Dielectric strength	kV/mm	ASTM D149	≥12

Other Optional Products	
SE1030	1.0 W/mK,viscosity 4000cps,ShoreA 45
SE1560S	1.5 W/mK,viscosity 4100cps,ShoreA 20
SE2030	2W/mK,viscosity 4500cps,ShoreA 50
SE3030	3W/mK,viscosity 11000-13000cps,ShoreA 55
SE4030	4W/mK,viscosity 18000cps,ShoreA 55

### Operation Process

- Mixing and apply: Thoroughly stir each component prior to mixing. Mix A and B parts at a ratio of 1:1 by weight or volume, until the color is uniform. Automatic mix/dispense equipment can be used for high volume production. Vacuuming are recommended to eliminate the air bubbles during the mixing.
- Curing: the mixed encapsulant can be cured for 30 minutes at 80°C, or 24 hours at room temperature, Avoid applying to substrates containing inhibitors like amines, sulfuer or tin salts.

### Typical Properties

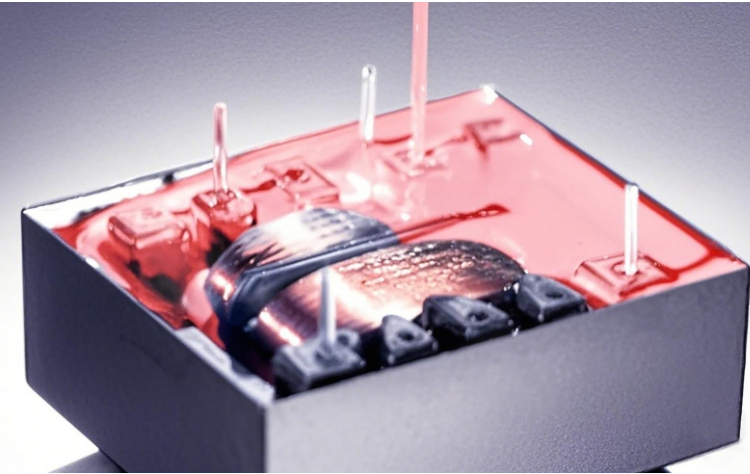
Properties	Unit	SE3230 Part A	SE3230 Part B	Mixed
Appearance	-	Pink liquid	White liquid	Ling pink liquid
Viscosity @ 25°C	cps	10000-13000	10000-13000	11000-13000
Specific gravity	g/cm³	3.00	3.00	3.00
Mix ratio by volume	-	1	1	-
Mix ratio by weight	-	1	1	-
Working life @ 25°C	min	-	-	30
Gel time @ 80°C	min	-	-	4-6
Curing time@ 25°C	h	-	-	24
Curing time@ 80°C	min	-	-	30

Typical Cured Properties			
Properties	Unit	Test Method	Value
Thermal conductivity	W/m·K	ASTM D5470	3.0
Hardness	Shore A	ASTM D2240	55
Tensile strength	MPa	ASTM D638	1.0
Elongation at break	%	ASTM D638	20
Volume resistivity	Ohm-cm	ASTM D257	1x10 <sup>14</sup>
Dielectric strength	kV/mm	ASTM D149	> 13

Other optional products	
SE3230LV	3W/m·K,viscosity 5000-8000cps,ShoreA 35
SE4030LV	4W/m·K,viscosity 9000-11000cps,ShoreA 40±5

### Operation Process

- Mixing and apply: Mix the A and B sides with manual or automatic mix equipment. Vacuum system is recommended to avoid any air entrapment during the mixing and applying.
- Curing: The mixed encapsulant can be initially cured for 24 hours at room temperature, or for 3-4 hours at 60°C. Complete curing will be achieved after 7 days at room temperature.



# KB–XERM SE3230

## Thermally Conductive Silicone Potting/Encapsulant

KLEBER KB-XERM SE3230 is a two-component silicone encapsulant designed to provide excellent thermal conductivity for electrical/electronic encapsulating applications, at the same time to provide a certain protection.

### Features and Benefits

- Room or elevated temperature cure
- Low exotherm and stress
- High temperature resistance
- Non-flammable

### Application

- On board charger
- Power modules
- Automotive
- Communication components

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25°C in original unopened container. The packaging container should be inverted periodically to reduce settlement.



# KB–XEAL UE120

## Polyurethane Potting/Encapsulant

KLEBER KB-XEAL UE120 is a two-component urethane material designed for encapsulating or casting applications. It has ultra low viscosity and can cures at room temperature to provide a flame retardant material.

### Features and Benefits

- Low viscosity and excellent flowability
- Room temperature curable
- Low hardness and stress during cure
- Resistant to enviromental test
- Non-flammable

### Application

- Autmotive electronics
- Battery assembly
- Power modules

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 25°C in original unopened container. After opening, protect each component from excessive moisture by using dry nitrogen as an inert cover.

### Typical Properties

Properties	Unit	UE120 Part A	UE120 Part B	Mixed
Appearance	-	Black liquid	Amber liquid	Black liquid
Viscosity @ 25°C	cps	500	70	400
Specific gravity	g/cm³	1.02	1.22	1.06
Mix ratio by weight	-	3	1	-
Working life @ 25°C	min	-	-	20
Gel time @ 25°C	min	-	-	50-60
Curing time @80°C	min	-	-	30
Curing condition				
Room temperature	hours	25°C 24 hours		
Elevated temperature	min	80°C 3-4hours		
Typical Cured Properties				
Hardness	Shore A	ASTM D2240		40-50
Volume resistivity @ 25°C	ohm-cm	ASTM D257		1x10 <sup>13</sup>
Dielectric strength	kV/mm	ASTM D149		15

Other Optional Products(Polyurethane/Epoxy) Potting Adhesive	
EP800/A45	Two-component,low viscosity,rapid curing rate,resistant to temperature and chemical solvent
EP800/A15	Two-component,good toughness,high bonding strength
EP800/A26	Two-component,low viscosity,rapid curing rate,resistant to high temperature(160°C)

### Operation Process

- Mixing and apply: Mix part A and part B with manual or automatic mix equipment. Vacuum system is recommended to avoid any air entrapment during the mixing and applying.
- Curing: The mixed encapsulant can be initially cured for 24 hours at room temperature, or for 3-4 hours at 60°C. Complete curing will be achieved after 7 days at room temperature.

### Typical Properties

Properties	Unit	EP205 Part A	EP205 Part B	Mixed
Appearance	-	Black transparent liquid	Colorless clear liquid	Black transparent liquid
Viscosity @ 25°C	mPa*s	10000-15000	8000-13000	-
Gel time @25°C/4g	min	-	-	3-5
Gel time @10°C/4g	min	-	-	6-8
Typical Cured Properties				
Properties	Unit	Test Method		Value
Shear strength , PP/PP	Mpa	ASTM D1002		3
Hardness	Shore D	ASTM D2240		80 ( 25°C/24h ) 55 ( 25°C/30min )



# KB–XERM EP205

## Epoxy Potting/Encapsulant

KLEBER KB-XERM EP205 is a two-component epoxy encapsulant material designed for electronic applications. It can be cured quickly at room temperature.

### Features and Benefits

- Low viscosity and easy to use
- Rapid reaction

### Application

- Electronic components potting

### Shelf Life/Storage

- Shelf life of each component is 1 year from date of manufacture when stored at 15-30°C in original unopened container.

### Operation Process

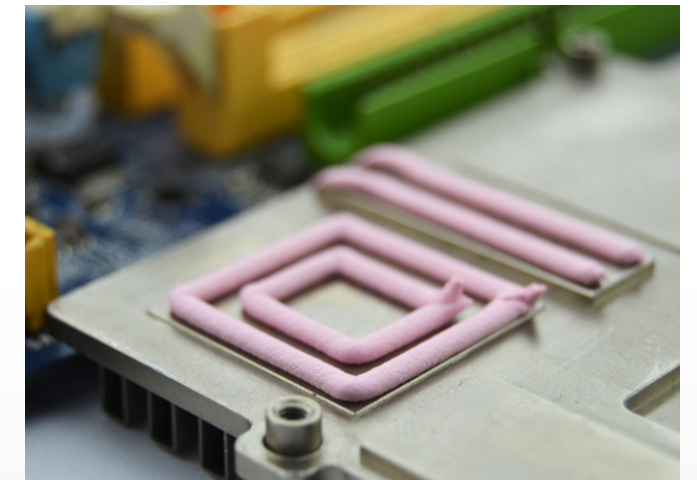
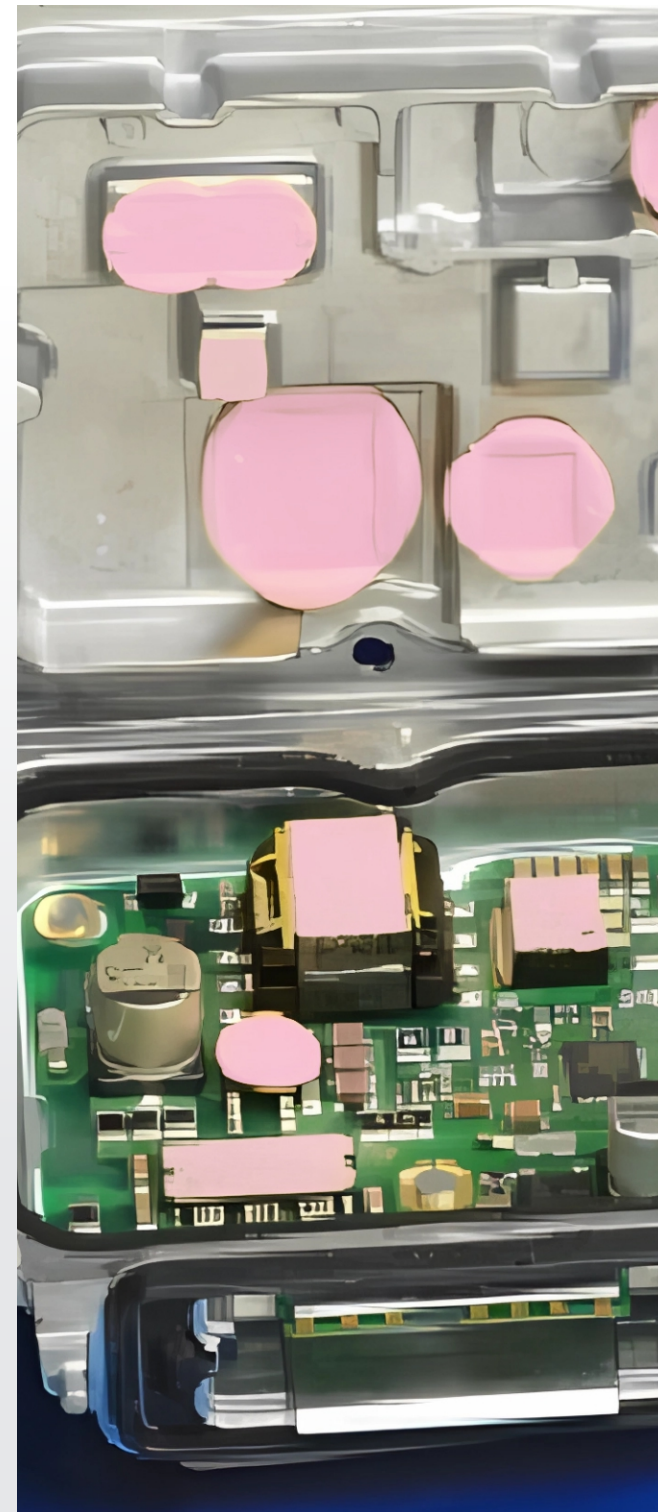
- Mix:Thoroughly stir Part A and B prior to use and mix at a ratio of 1:1 by volume. Hand-held cylinder or automatic mixing equipment are recommended. Manual mixing is not recommended.
- Application:Remove oil, grease, dust and other impurities on the surface of the substrate, and apply the mixed adhesive on the substrate, glue the parts within the operating time, clamp until the adhesive reaches the operating strength.
- Curing: After one hour at room temperature it can have a certain strength, and after one day at room temperature it can be fully cured.



## Gap Filler



We can provide in-situ fixing solution. The soft system has low strength and can be disassembled for maintenance.



- The thermal management of EV power battery and the requirement of detachable maintenance can be realized by using thermal conductive gap filler. Thermal conductive gap filler can evenly fill the gap for heat transfer, so that the battery can obtain the best working temperature. This is a solution for in-situ fixation which can be cured into a gel to relieve stress caused by differences in heat and softness. The soft system has low strength and can be disassembled for maintenance.
- Shock resistance: Our gap filler can maintain a certain degree of stickiness and softness for long time, which can play a role in shock absorption.
- Low volatility: We provide low-volatility solutions for sensitive electronic applications. The silicone-free system does not contain volatile siloxane.
- Application: Automatic dispensing system can be used to realize the whole process of automatic construction.



# KB–XERM SG4060 S

## Thermally Conductive Silicone Gap filler

KLEBER KB-XERM SG4060 S thermally conductive silicone gap filler is a two-component system designed to provide excellent thermal conductivity for electronic applications.

### Features and Benefits

- Room or elevated temperature cure
- Low exotherm and stress
- High temperature resistance
- Non-flammable

### Application

- On board charger
- Power modules
- Automotive
- Communication components

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25°C in original unopened container.

### Typical Properties

Properties	Unit	SG4060 S Part A	SG4060 S Part B	Mixed
Appearance	-	Pink paste	White paste	Light pink
Viscosity @ 25°C	Pa·s	80	80	80
Specific gravity	g/cm³	3.3	3.3	3.3
Mix ratio by volume	-	1	1	-
Mix ratio by weight	-	1	1	-
Working time @ 25°C	min	-	-	60
Curing time @ 25°C	h	-	-	12
Curing time @ 100°C	min	-	-	30
Typical Cured Properties				
Properties	Unit	Test Method		Value
Thermal conductivity	W/m·K	ASTM D5470		4.0
Hardness	Shore 00	ASTM D2240		60±5
Tensile strength	MPa	ASTM D638		0.20
Elongation at break	%	ASTM D638		50
Volume resistivity	Ohm·cm	ASTM D257		1x10 <sup>12</sup>
Dielectric strength	kV/mm	ASTM D149		>9

### Typical Properties

Properties	Unit	SG2060 Part A	SG2060 Part B	Mixed
Appearance	-	Yellow	White	Yellow
Viscosity @ 25°C	Pa·s	75	75	75
Specific gravity	g/cm³	2.80	2.80	2.80
Mix ratio by volume	-	1	1	-
Mix ratio by weight	-	1	1	-
Working time @ 25°C	min	-	-	60
Curing time @ 25°C	h	-	-	12
Curing time @ 100°C	min	-	-	20
Typical Cured Properties				
Properties	Unit	Test Method		Value
Thermal conductivity	W/m·K	ASTM D5470		2.0
Hardness	Shore 00	ASTM D2240		65±5
Tensile strength	MPa	ASTM D638		0.25
Elongation at break	%	ASTM D638		75
Volume resistivity	Ohm·cm	ASTM D257		1x10 <sup>13</sup>
Dielectric strength	kV/mm	ASTM D149		16

Other Options Available (Thermally Conductive Polyurethane/Silicone) Caulking Adhesive	
SG3060	3W/m·K,Shore 00 75
SG4060	4W/m·K,Shore 00 89

### Operation Process

- Mixing and apply: Mix A and B parts at a ratio of 1:1 by weight or volume. Automatic mix/dispense equipment can be used for high volume production. Vacuuming is recommended to eliminate the air bubbles during the mixing.
- Curing: the mixed encapsulant can be cured for 20 minutes at 100°C, or 12 hours at room temperature, Avoid applying to substrates containing inhibitors like amines, thiol or tin salts.



# KB–XERM SG2060

## Thermally Conductive Silicone Gap filler

KLEBER KB-XERM SG2060 thermally conductive silicone gap filler is a two-component system designed to provide excellent thermal conductivity for electronic applications.

### Features and Benefits

- Room or elevated temperature cure
- Low exotherm and stress
- High temperature resistance
- Non-flammable

### Application

- On board charger
- Power modules
- Automotive
- Communication components

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25°C in original unopened container.





# KB–XERM SG2060 D

## Thermally Conductive Silicone Gap filler

KLEBER KB-XERM SG2060 D thermally conductive silicone gap filler is a two-component system designed to provide excellent thermal conductivity for electronic applications.

### Features and Benefits

- Room or elevated temperature cure
- Low exotherm and stress
- High temperature resistance
- Non-flammable

### Application

- On board charger
- Power modules
- Automotive
- Communication components

### Shelf Life/Storage

- Shelf life of each component is 6 months from date of manufacture when stored at 10-25°C in original unopened container.



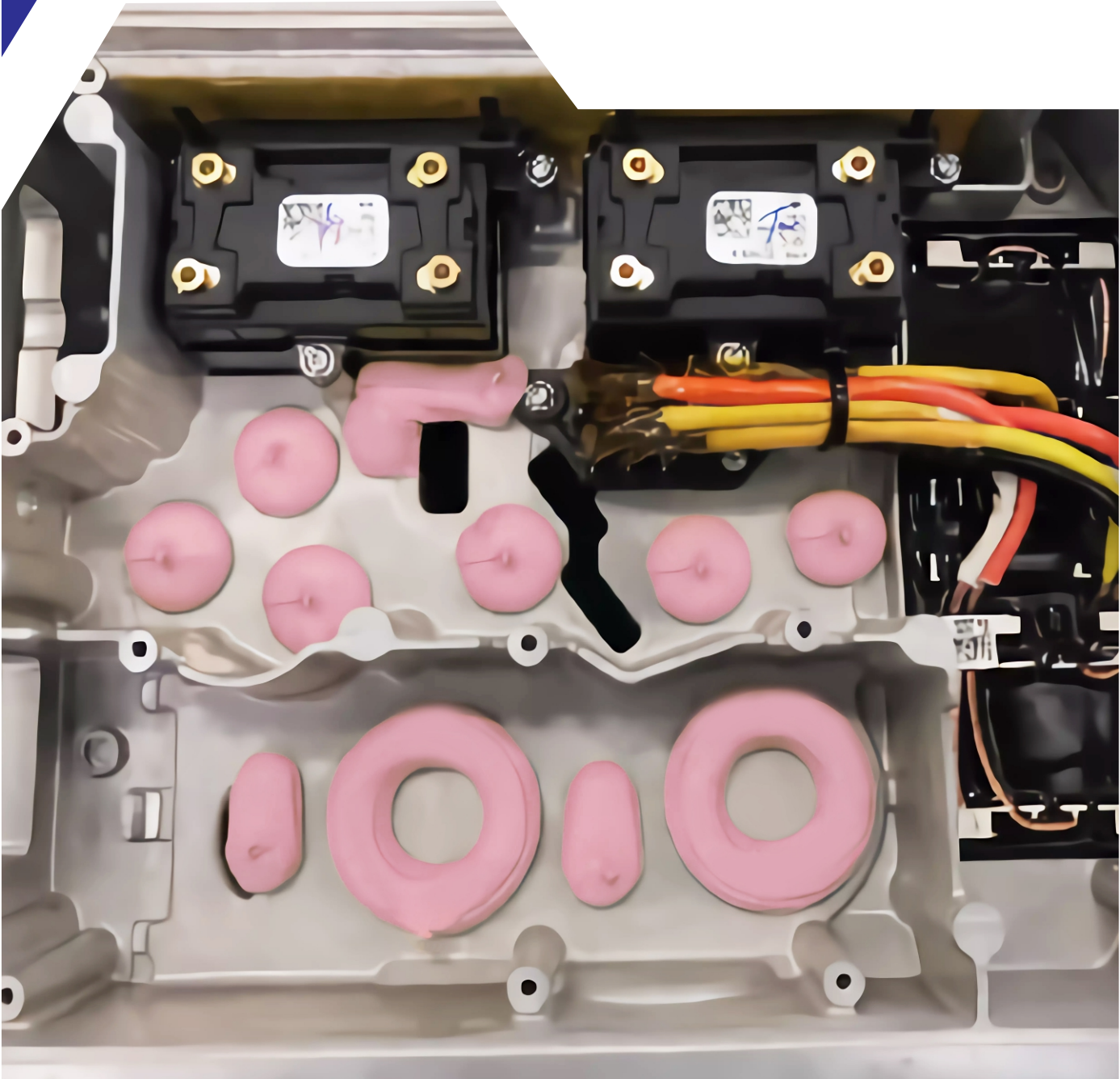
### Typical Properties

Properties	Unit	SG2060 D Part A	SG2060 D Part B	Mixed
Appearance	-	Yellow	White	Yellow
Viscosity @ 25°C	Pa·s	85	75	80
Specific gravity	g/cm³	2.0	2.0	2.0
Mix ratio by volume	-	1	1	-
Mix ratio by weight	-	1	1	-
Working time @ 25°C	min	-	-	60
Curing time @ 25°C	h	-	-	12
Curing time @ 120°C	min	-	-	30
Typical Cured Properties				
Properties	Unit	Test Method		Value
Thermal conductivity	W/m·K	ASTM D5470		2.1
Hardness	Shore 00	ASTM D2240		65
Tensile strength	Mpa	ASTM D638		0.12
Elongation at break	%	ASTM D638		30-50
Volume resistivity	Ohm·cm	ASTM D257		1x10 <sup>13</sup>
Dielectric strength	kV/mm	ASTM D149		13

### Operation Process

- Mixing and apply: Mix A and B parts at a ratio of 1:1 by weight or volume. Automatic mix/dispense equipment can be used for high volume production. Vacuuming is recommended to eliminate the air bubbles during the mixing.
- Curing: the mixed encapsulant can be cured for 30 minutes at 120°C, or 12hours at room temperature, Avoid applying to substrates containing inhibitors like amines, thiol or tin salts.

## Kleber Applications





# Our market selection



## Communications and data center market

- Thermal Conductive Structural Adhesive (Acrylic,Epoxy, Polyurethane)
- Thermal Conductive Potting/Encapsulant (Silicone,Epoxy, Polyurethane)
- Structural Adhesive (Acrylic,Epoxy, Polyurethane)



## Automobile market

- Thermal Conductive Potting/Encapsulant (Silicone,Epoxy,Polyurethane)
- Thermal Conductive Gap Filler (Silicone,Polyurethane)
- Structural Adhesive (Acrylic, Epoxy, Polyurethane)



## Consumer electronics market

- Structural Adhesive (Acrylic,Polyurethane)
- Encapsulant / Underfill (Epoxy,Polyurethane,Silicone)

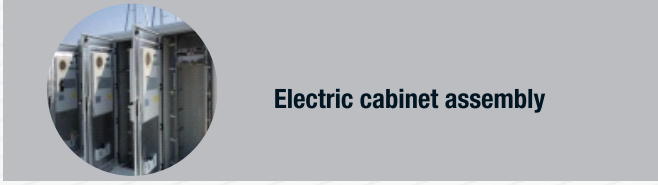


## Aerospace market

- Structural Adhesive (Epoxy, Polyurethane,Acrylic)

# Typical applications in 5G field

## Structural bonding instead of welding and riveting



## Thermal management Applications



Electronic components

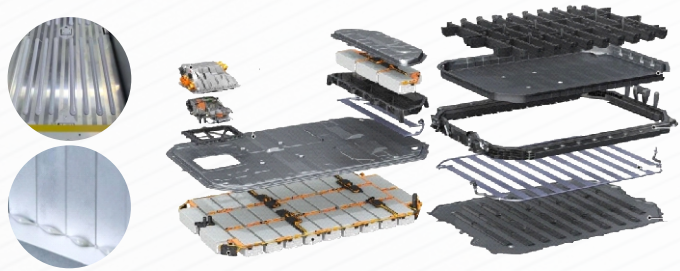


Power components



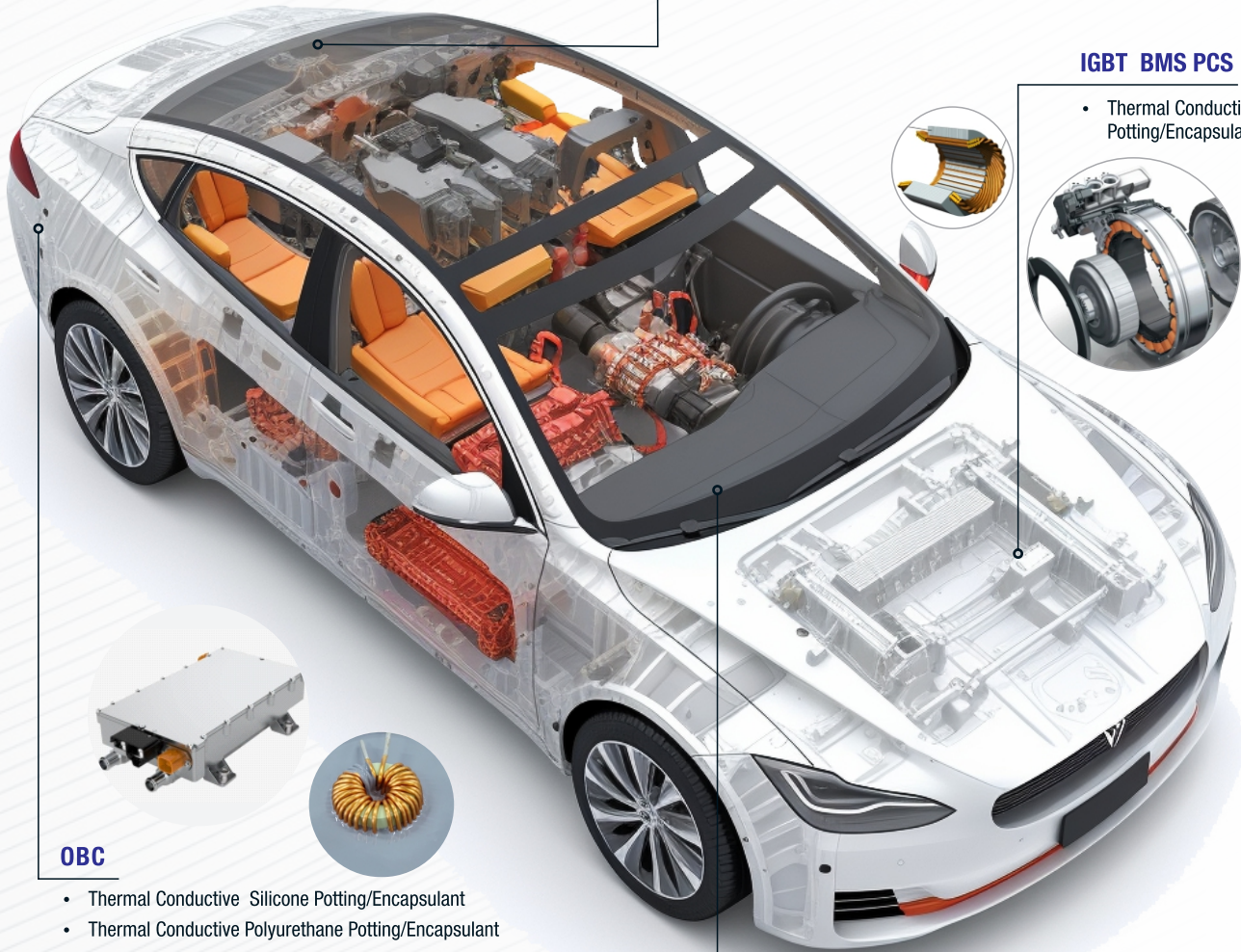
Chip radiator

# Application in EV



## Battery Pack

- Medium strength TCSA UA2030
- High strength TCSA EA1060,AA1003
- Disassembled thermal conductive gap filler SE2030

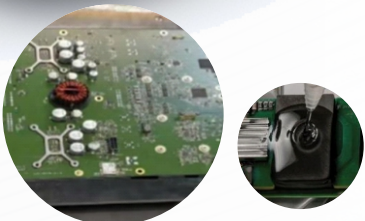


## IGBT BMS PCS

- Thermal Conductive Potting/Encapsulant

## OBC

- Thermal Conductive Silicone Potting/Encapsulant
- Thermal Conductive Polyurethane Potting/Encapsulant



## Automotive electronic modules and sensors: Autonomous driving

- charging handle filler
- Shell bonding structural adhesive



## Kleber Packages/Tools



Kleber provides various packaging specifications of adhesive and encapsulant, syringe from 50mL to 400mL and barreled from 0.5L to 200L all can be purchased.

### Pail/Drum

0.5L 1L 3.5L 20L 200L

### Cartridge

50ml 200ml 375ml 400ml

Kleber offers sizing tools in a variety of sizes.



## Kleber packages /Tools

