wakefield-vette

BondaTherm

 $BondaTherm^{^{TM}}$

Eliminates improper ratios and mixing errors

Eliminates employee contact with resins

Reduces material waste

Increases productivity



Wakefield Vette Part Number BT-101-50M Non-Sag 5 Minute BondaTherm Epoxy Adhesive BT-102-50M Toughened, Flexible Adhesive System BT-301-50M Fast Curing Thermally Conductive Adhesive	Packaging 50ml Dual Catridges 50ml Dual Catridges 50ml Dual Catridges
BT-102-50M Toughened, Flexible Adhesive System BT-301-50M Fast Curing Thermally Conductive Adhesive	50ml Dual Catridges 50ml Dual Catridges
BT-301-50M Fast Curing Thermally Conductive Adhesive	50ml Dual Catridges
· ,	
DT 204 2004	
BT-301-200M Fast Curing Thermally Conductive Adhesive	200ml Dual Catridges
BT-01-50M BondaTherm Equalizer Dispense Gun (50ml)	
BT-01-200M BondaTherm Equalizer Dispense Gun (200ml)	
BT-02-50M BondaTherm Equalizer Static Mixer (50ml)	
BT-02-200M BondaTherm Equalizer Static Mixer (200ml)	
BT-101-50M-EQZ Two Dual Cartridges (BT-101-50M), One Gun (BT-01-50M), Three Mixe	ers (BT-02-50M) Kit
BT-102-50M-EQZ Two Dual Cartridges (BT-102-50M), One Gun (BT-01-50M), Three Mixe	ers (BT-02-50M) Kit
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BT-301-200M-EQZ Two Dual Cartridges (BT-301-200M), One Gun (BT-01-200M), Three Mixe	ers (BT-02-200M) Kit
BT-103-50M 5 Minute Clear Bondatherm Epoxy Adhesive	50ml Dual Catridges
BT-302-50M Fast Curing Aluminum Filled Bondatherm Epoxy Adhesiv	ye 50ml Dual Catridges
BT-401-H Silver Filled Bondatherm 2 gram Epoxy Hinge Packs	2 gram hinge pack
BT-402-H Thermally Conductive Epoxy Potting UL Listed 100 gram Bondathern	m Hinge Pack 100 gram hinge pack
BT-403-H Aluminum Filled Bondatherm Epoxy Adhesive for Heat Sinks 100 gra	m Hinge Pack 100 gram hinge pack



Bondatherm Cartridges



BT-101-50M

This high bond strength adhesive is a clear 100% solids, two component, non-sag adhesive with a quick setting time of 5 minutes at room temperature. It is excellent for bonding plated metals, pewter, glass, wood, ceramic, felt, cement, gem stones, most plastics and rubbers, etc...

DESCRIPTION:

These high bond strength adhesives are clear 100% solids, two component, non-sag adhesives with a quick setting time of 5-46 minutes at room temperature. They are excellent for bonding plated metals, pewter, glass, wood, ceramic, felt, cement, gem stones, most plastics and rubbers, etc...

These adhesives were tested in our laboratory for flame retardancy properties. According to our test results they meet the requirements of UL94HB.

APPLICATIONS:

These unique adhesives are ideally suited for a wide range of electronic, electrical, industrial, structural, and jewelry applications. These adhesives are also an excellent choice for field repairs. They are offered in the popular BondaTherm Equalizer Kit dual barrel cartridge dispensing system and bulk packaging.

FEATURES:

- Non-sag consistency
- · High bond strength
- Fast room temperature cure three speeds to choose from
- · Water & chemical resistance
- Outstanding thermal shock resistance
- 1:1 mix ratio
- Impact resistance

SPECIFICATIONS:

0-1	0
Color	Semi-transparent (available in black)
Mix ratio by volume	1:1
Mixed viscosity, 25°C cps*	Non-Sag
Solids content, %	100
Specific gravity, 25°C	1.15
Shore D hardness	
10-3005NS	86
10-3020NS	72
10-3046NS	65
Work Life, 25°C, minutes	
10-3005NS	3-5
10-3020NS	10-15
10-3046NS	25-30
Handling time, 25°C, minutes	
10-3005NS	15-20
10-3020NS	30-35
10-3046NS	55-60
Cure time, 25℃, hours	24-48



Bondatherm Cartridges

BT-101-50M (Cont.)



Coefficient of thermal expansion	
(in/in/℃)	60x10 ⁻⁶
Operating temperature range, ℃	⁻ 50 to ⁺ 130
Dielectric strength,V/mil	420
Izod Impact ft-lb/in	2.7
Dielectric constant, 1KHz at 25°C	4.00
Dissipation factor, 1KHz at 25°C	.017
Volume resistivity, ohm-cm at 25°C	2.0×10^{14}
Shear strength, psi	
Aluminum (etched)	1,500
Cold rolled steel	1,000
Copper	960
Brass	725
Stainless Steel	750
Galvanized Steel	900
ABS	500
PVC	335
Polycarbonate	250
Compression strength, psi	8,500
Coverage, .005 in. thick bond line, sq. ft./gallon	320
sy. 11./yanon	

INSTRUCTIONS FOR USE:

- 1. Thoroughly mix equal parts of resin to catalyst by weight or volume.
- 2. Apply evenly to both surface(s) to be bonded.
- 3. Application to the substrates should be made within five minutes. Larger quantities and/or higher temperatures will reduce the working time. Avoid mixing large quantities and/or at high temperature due to the possibility of creating a high exothermic temperature.
- 4. Join the coated surfaces. Allow to cure at 60°F (16°C) or higher until adhesive is set. Heat may be added up to 200°F (93°C) to accelerate the cure.
- 5. Avoid moving parts during cure. Pressure to the substrates is recommended. Maximum shear strength is obtained with a 3-5 mil bond line.





BT-102-50M

Bondatherm Cartridges

A two component system that forms strong structural bonds at room temperature. This unique adhesive system provides high peel and shear strengths. This is excellent for bonding many metals and woods, most plastics and rubbers and masonry products.

DESCRIPTION:

BT-102-50M is a toughened, flexible, and impact resistant epoxy adhesive. BT-102-50M is a two component system that forms strong structural bonds at room temperature. This unique adhesive system provides high peel and shear strengths. BT-102-50M is excellent for bonding many metals and woods, most plastics and rubbers and masonry products. This system is designed for electronic, aerospace and other demanding industrial applications.

This product is available in the popular BondaTherm Equalizer dual barrel cartridge system.

FEATURES:

- Impact resistant
- Excellent electrical insulator
- · High peel and shear
- · Outstanding structural bonds
- Convenient 1:1 Ratio
- · Retention of strength after environmental aging

Typical Specifications:

Mixed viscosity, 25°C, cps	150,000
Specific gravity, 25°C,	
Resin	1.32
Catalyst	1.20
Gel time, 100 grams, 25°C	70 minutes
Tensile shear strength, psi	2,600
Durometer, shore D	70
Dielectric strength, V/mil	410
Dielectric constant, 60 Hz	4.4
Dissipation factor, 60 Hz	.02
Volume resistivity, ohm-cm	1.1 x 10 ¹⁵
Thermal conductivity, btu-in/hr-ft ² -°F	.58 W/m-K
Coefficient of thermal expansion, per °C	10 x 10 ⁻⁵

Adhesive coverage: a .005-inch bond line will yield approximately 320sq. ft./gallon





BT-102-50M (cont.)

Bondatherm Cartridges

INSTRUCTIONS FOR USE:

- Surfaces must be clean and grease free. Use an oil free solvent such as acetone to wipe surfaces. Adhesion can be substantially increased by abrading the surfaces to be bonded with emery cloth, sand paper, carbide grinding tools, sand blasting, etc... A roughened, porous surface will produce the best results. Any oxidized metal films should be removed just prior to application of the epoxy adhesive mixture.
- 2) Thoroughly mix equal parts of resin and catalyst by volume.
- 3) Apply mixed product evenly to both surfaces.
- 4) Join the adhesive coated surfaces within 60 minutes of mixing resin and catalyst.
- 5) Cure according to one of the following schedules:

77°F 24-48 hours 150°F 2 hours 180°F 1 hour 200°F 30 minutes

STORAGE, HANDLING, AND AVAILABILITY:

Store in a cool, dry place in original containers. Keep containers closed and stir well before using.





Bondatherm Cartridges

BT-301-50M BT-301-200M

BT-301-XXM has a simple 1:1 mix ratio and develops a 1,400 psi Lap Shear strength (aluminum to aluminum) in four hours at room temperature. After just twenty four hours the strength is over 2,200 psi. This is perfect for any thermally conductive applications.

DESCRIPTION:

BT-301-XXM is a two component fast curing thermally conductive epoxy adhesive. This product was specifically formulated for use in the convenient BondaTherm Equalizer dual barrel cartridge system.

BT-301-XXM has a simple 1:1 mix ratio and develops a 1,400 psi Lap Shear strength (aluminum to aluminum) in four hours at room temperature. After just twenty four hours the strength is over 2,200 psi.

BT-301-XXM offers fast heat dissipation for a wide range of electronic applications. The black resin and white hardener provide an excellent visual indication of a complete mix.

FEATURES:

- Fast room temperature cure
- · Thermally conductive
- Forms strong bonds to a variety of substrates
- Electrically insulating
- Vibration and impact resistant

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TYPICAL PROPERTIES:

Color	
Resin	Black
Hardener	White
Mixed	Dark Gray
Viscosity, @25°C, cps	·
Resin	70,000
Hardener	70,000
Specific Gravity, @25°C	
Resin	1.5
Hardener	1.5
Gel Time, 25°C, 15 grams	15 minutes
Durometer, Shore D	
@25°C	80
@70°C	50
Lapshear Strength (Al to Al), psi	
After 4 hours	1,413
After 24 hours	2,231



Bondatherm Cartridges



BT-301-50M BT-301-200M (cont.)

Thermal Conductivity, W/m- % 1.04 Dielectric Strenath, V/mil. 440 Dielectric Constant, 25°C, 100Hz 5.3 Volume Resistivity, ohm-cm, 25°C 2.4×10^{12}

Coefficient of Thermal Expansion, ppm/°C

Below Ta 45 Above Tg 175

Operating Temperature, °C -40 to +120

NOTES:

- 1) At room temperature, BT-301-XXM will reach handle cure within 1-2 hours. The lap shear strength is 1,413 psi after 4 hours.
- 2) This product is an adhesive and is not designed for potting and encapsulating applications. BT-301-XXM is a fast reacting epoxy system and it will create a high exothermic temperature in large mass sizes (avoid mass sizes greater than 25 grams).

INSTRUCTIONS FOR USE:

- 1) Surfaces must be clean and grease free. Use an oil free solvent such as acetone to wipe surfaces. Adhesion can be substantially increased by abrading the surfaces to be bonded with emery cloth, sand paper, carbide grinding tools, sand blasting, etc... A roughened, porous surface will produce the best results. Any oxidized metal films should be removed just prior to application of the epoxy adhesive mixture.
- 2) Dispense material from BondaTherm Equalizer. Apply mixed product to substrate to be bonded.
- 3) Join substrates within 3-5 minutes.
- 4) Cure according to one of the following schedules:

25°C 2-4 hours 65°C < 10 minutes

STORAGE, HANDLING AND AVAILABILITY:

Store in a cool, dry place in original containers.

Please read and understand the Safety Data Sheet (SDS) before using this product.





BT-103-50M

Bondatherm Cartridges

These high bond strength adhesives are clear 100% solids, two component, low viscosity adhesives with a quick setting time of 5-46 minutes at room temperature. They are excellent for bonding plated metals, pewter, glass, wood, ceramic, felt, cement, gem stones, most plastics and rubbers, etc...

These adhesives were tested in our laboratory for flame retardancy properties. According to our test results they meet the requirements of UL94HB.

APPLICATIONS:

These unique adhesives are ideally suited for a wide range of electronic, electrical, industrial, structural, and jewelry applications. These adhesives are also an excellent choice for field repairs. They are offered in the popular TriggerBond® dual barrel cartridge dispensing system and bulk packaging.

FEATURES:

- · High bond strength
- Outstanding thermal shock resistance
- · Water and chemical resistance
- Impact resistance
- 1:1 mix ratio
- Fast room temperature cure three speeds to choose from

TYPICAL SPECIFICATIONS (10-3005)

TYPICAL SPECIFICATIONS (10-3003)	
Color	Clear (available in black)
Mix ratio by volume	1:1
Mixed viscosity, 25°C cps * Solids	12,000
content, %	100
Specific gravity, 25°C Shore D hardness	1.15
10-3005	
10-3020	86
10-3046	72
	65
Work Life, 25°C, minutes 10-3005	
10-3020	3-5
10-3046	10-15
Handling time, 25°C, minutes	25-30
10-3005	
10-3020	15-20
10-3046	30-35
	55-60
Cure time, 25°C, hours	24-48





BT-103-50M (Cont.)

Coefficient of thermal expansion

Bondatherm Cartridges

(in/in/oC)	
(in/in/°C)	60x10 ⁻⁶
Operating temperature range, °C Dielectric strength,	-50 to +130
V/mil	420
Izod Impact, ft-lb/in.	2.7
Dielectric constant, 1KHz at 25°C	4.00 .017
Dissipation factor, 1KHZ at 25°C Volume resistivity, ohm-cm at 25°C Shear strength, psi	2.0 x 10 ¹⁴
Aluminum (atahad) Cold rollad	

Aluminum (etched) Cold rolled

steel Copper 1,500 Brass 1,000 Stainless Steel Galvanized Steel 960 725 ABS 750 PVC 900 Polycarbonate 500 Compression strength, psi 335 Coverage, .005 in. thick bond line, sq. ft./gallon 250 8,500

320

INSTRUCTIONS FOR USE:

- 1. Thoroughly mix equal parts of resin to catalyst by weight or volume.
- 2. Apply evenly to both surface(s) to be bonded.
- Application to the substrates should be made within five minutes. Larger quantities and/or higher temperatures will reduce the working time.
 Avoid mixing large quantities and/or at
 - high temperature due to the possibility of creating a high exothermic temperature.
- Join the coated surfaces. Allow to cure at 60°F (16°C) or higher until adhesive is set. Heat may be added up to 200°F (93°C) to accelerate the cure.
- Avoid moving parts during cure. Pressure to the substrates is recommended. Maximum shear strength is obtained with a 3-5 mil bond line.



Bondatherm Hardware

Wakefield Vette Part Number	Description
BT-01-50M	BondaTherm Equalizer Dispense Gun (50ml)
BT-01-200M	BondaTherm Equalizer Dispense Gun (200ml)
BT-02-50M	BondaTherm Equalizer Static Mixer (50ml)
BT-02-200M	BondaTherm Equalizer Static Mixer (200ml)

Bondatherm Equalizer Gun

BT-01-50M For use w/ 50ml Cartridges

BT-01-200M For use w/ 200ml Cartridges





Bondatherm Equalizer Static Mixers

BT-02-50M For use w/ 50ml Cartridges BT-02-200M For use w/ 200ml Cartridges





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BondaTherm Equalizer Kit

Wakefield Vette Part		
Number	Description	Packaging
	Two Dual Catridges (BT-101-50M), One Gun (BT-01-	
BT-101-50M-EQZ	50M), Three Mixers (BT-02-50M)	Kit
	Two Dual Catridges (BT-102-50M), One Gun (BT-01-	
BT-102-50M-EQZ	50M), Three Mixers (BT-02-50M)	Kit
	Two Dual Catridges (BT-301-50M), One Gun (BT-01-	
BT-301-50M-EQZ	50M), Three Mixers (BT-02-50M)	Kit
	Two Dual Catridges (BT-301-200M), One Gun (BT-	
BT-301-200M-EQZ	01-200M), Three Mixers (BT-02-200M)	Kit

(2) Dual Cartridges,(1) Dispense Gun, (3) Static Mixers









Bondatherm Hinge Packs

BT-401-H

DESCRIPTION:

BT-401-H is a two component epoxy adhesive filled with silver. This electrically conductive epoxy resin formulation offers continuity of conductivity with an electrical resistivity value of less than 1×10^{-4} ohm-cm. 40-3900 is also well known for its wide operating temperature range, -50 to + $170 \, \text{C}$.

BT-401-H is specifically designed for adhesive bonding in microelectronic and optoelectronic applications. Due to its excellent continuity, it has also been used extensively in applications such as micro-wave EMI and RFI shielding, in the assembly or repair of printed circuit boards, wave guides, electronic modules, flat cable, high frequency shields, connectors, circuitry, and as a cold solder.

BT-401-H is formulated with pure silver (no alloys) and is designed in a convenient 1:1 mix ratio.

Both the resin and hardener have silver powder dispersed.

FEATURES:

- Electrically conductive
- Thermally conductive
- Room temperature cure
- Easy 1:1 mix ratio
- Good bond strength

TYPICAL SPECIFICATIONS:

Mix Ratio, by Weight	1:1
Color	Silver
Mixed Viscosity	Creamy Paste
Pot Life, 100 gram mass @ 25℃	1 Hour
Specific Gravity, 25℃	
Resin	2.98
Hardener	1.8
Hardness, Shore D	70
Thermal Conductivity, W/m- K	7.93
Tensile Lapshear, psi (Al to Al)	700
Flexural Strength, psi	10,200
Volume Resistivity, ohm-cm	.0001
Operating Temp. Range, ℃	⁻ 50 to ⁺ 170
Cure Schedule	a) 24 hours @ 25°C
	b) 1 hour @ 65°C c) 15 minutes @ 90°C

STORAGE AND HANDLING:

BT-401-H Resin and hardener should be stored at 25°C in original tightly sealed containers. Expected shelf life is twelve months in original unopened containers.

Filler settling is common with these products. Gently stir resin and hardener before using to make sure fillers are evenly dispersed.





Bondatherm Hinge Packs

BT-402-H

DESCRIPTION:

BT-402-H has been formulated to meet the stringent non-burning requirements of UL94 V-0. BT-402-H Black Epoxy is used with Catalyst 190 and are listed with Underwriter's Laboratory for passing UL94 V-0. This system offers excellent heat transfer, low shrinkage, and outstanding insulation properties.

BT-402-H Black with Catalyst 190 passes NASA's outgassing requirements per ASTM E595-07. Other Catalyst's are available as well (30, 150.).

Typical applications for BT-402-H include encapsulating power supplies, transformers, coils, insulators, sensors, etc... This system is an excellent choice for applications requiring high thermal conductivity and flame retardancy.

TYPICAL SPECIFICATIONS:

Viscosity @ 25°C cps, Resin	60,000
Mixed with Cat. 190	28,000
Mixed with Cat. 30	17,000
Mixed with Cat. 150	1,500
Specific Gravity, 25°C	1.6
Hardness, Shore D Color	90
Tensile Strength, psi	Black
Linear Shrinkage, in/in	9,850
Operating Temp. Range,°C	.002
Dielectric Strength, V/mil Dielectric	⁻ 60 to ⁺ 200
Constant at 60 Hz	485
Volume Resistivity, ohm-cm, 25℃	5.6
Dissipation Factor, 60 Hz	1.5 x 10 ¹⁵
Thermal Conductivity, W/m- K	.015
Compressive Strength, psi	2.16
	15,000
Coefficient of Expansion, in/in F	1.4 x 10 ⁻⁵
Heat Distortion, °C Outgassing	155
(with Cat. 190)	
%TML	.50
%CVCM	.01
/50.011	

INSTRUCTIONS FOR USE:

- A. With Catalyst 190 listed with UL 94 V-0 (room temperature curing):
- 1. By weight, thoroughly mix 5 parts Catalyst 190 to 100 parts BT-402-H resin.
- 2. Degas and pour. Cure at room temperature for 12-24 hours at 25°C ambient.
- B. With Catalyst 30 listed with UL 94 V-0 and RTI Rating of 130°C (Heat curing Recommended for higher operating temperature and physical property applications):
 - 1. By weight, thoroughly mix 10 parts Catalyst 30 to 100 parts BT-402-H resin.
 - 2. Pour and cure according to one of the following recommended cure schedules:
 - a) 85°C (185°F) 3-4 hours b) 100°C (212°F) 2-3 hours

For optimum performance, an additional 2 hours @ 365°F (185°C) is recommended.

- C. With Catalyst 150 (room temperature/heat curing):
 - 1. By weight, thoroughly mix 17 parts Catalyst 150 to 100 parts BT-402-H resin.
 - 2. Degas and pour. Cure at room temperature for 24 hours or for 2-3 hours at 35-40°C.





Bondatherm Hinge Packs

BT-403-H

DESCRIPTION:

BT-403-H is a two component, aluminum filled epoxy system. This system is used for making heat resistant tools, parts, or bonds that require the highest thermal conductivity and heat resistance. We have developed this extremely conductive epoxy by formulating it with a unique combination of fillers, particle sizes and dispersion techniques.

BT-403-H has good heat dissipation making this a popular choice for a variety of heat sink applications. Its viscosity is particularly suited for Fin bonding.

BT-403-H passes NASA's outgassing requirements per ASTM E-595-07.

FEATURES:

- · Excellent Thermal Conductivity
- Superior Adhesion
- · Low Viscosity allows quick self leveling

TYPICAL SPECIFICATIONS:

Color	Grey
Viscosity, 25°C,	j
Resin	130,000
Mixed	8,000
Specific Gravity, 25°C	1.81
Working time, 100 grams, 25°C	5 Hours
Durometer, Shore D	
25℃	90
100℃	65
Tensile Strength, psi, 25℃ Aluminum	9,000
to Aluminum	
1" overlap	2,500
Compressive Strength, PSI, 25℃ Mix	18,500
Ratio, by weight	100:10
Operating temperature, °C	-55 to 155
Coefficent of Thermal Expansion, ℃ Thermal	28 x 10 ⁻⁶
Conductivity, W/m- K	4.5
Outgassing	
% TML	.91
% CVCM	.07

MIXING INSTRUCTIONS:

- 1) By weight thoroughly mix 100 parts BT-403-H epoxy with 10 parts BT-403-H.
- 2) Cure according to one of the following schedules:

25°C 24 Hours 65°C 45 Minutes 125°C 15-20 Minutes

To reduce the viscosity of the resin and help with air release, warm the resin to moderate temperatures (80-100°F) before adding the curing agent. Some settling is common during storage and transit. Premix resin thoroughly before adding curing agent.

ПОСТАВКА ЭЛЕКТРОННЫХ КОМПОНЕНТОВ

многоканальный

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации Вы можете приобрести в компании MosChip.

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Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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