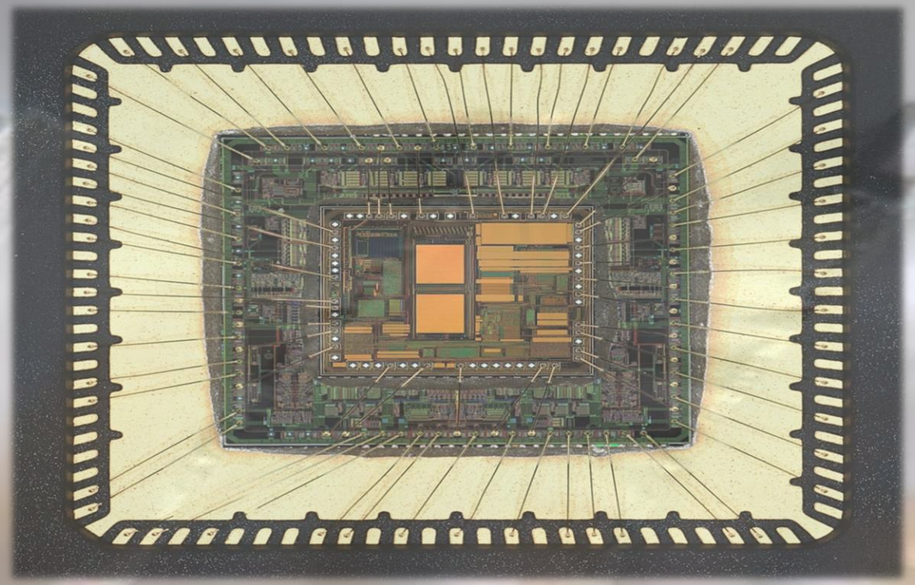
Engineering high performance and sustainable solutions today for the needs and opportunities of tomorrow.

We do so with respect for our people, our customers, our supplier partners, our community, and our environment.

100% MADE IN THE USA

MicroCoat Technologies UV Cure & Electronics Grade **Silicones** Product Selection Guide

Effective Date: May 2024-3.0



- 100% solids, 100% solvent free
- Full curing in seconds at ambient temperature
- Bond a broad range of dissimilar substrates
- Single part formulations requiring no mixing
- Long shelf/pot life (6-12 months)
- High flash points (typically >200°F)
- No need for explosion proof processing equipment
- Low toxicity formulations with little or no odor
- Will not bond to worker's skin
- Suitable for manual and automated application
- Easily repaired after curing

MicroCoat Technologies

Unparalleled in Polymer Coatings and Adhesives Technology

http:www.m-coat.com

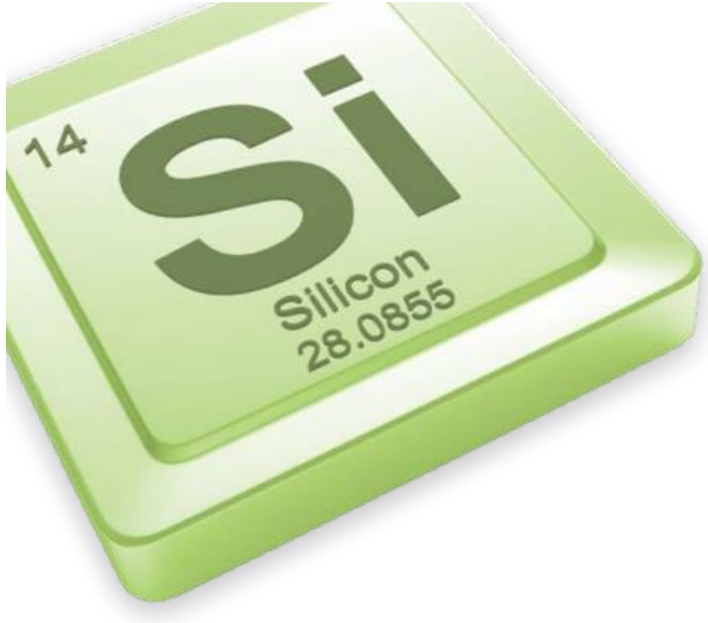
Whatever you're doing with your electronics manufacturing

Conformal Coating, Encapsulating, Potting, Adhering, Staking, Glob Topping

MCT Silicones does it better!

The values outlined in the following tables reflect testing that was conducted under laboratory conditions. Actual results may vary. Some data in the enclosed tables are derived from pre-production samples and are subject to change. Consult TDS for up to date specs

Please consult your sales representative for additional info.



Conformal Coating

Encapsulating, Potting

Adhering, Staking,

Glob Topping

Silicone does it better. And nobody does silicone better than **MicroCoat!!!**.

Standard silicones utilize acetoxy or oxime cure mechanisms, releasing acetic or ketonic acid fumes, which can corrode copper and other metals. By using an **alkoxy cure**, electronics grade silicones release only non-corrosive methanol which is not harmful to sensitive electronics.

In addition, MicroCoat **Electronics Grade Silicones** are formulated without non-reactive plasticizers for **superior performance** within a wide range of possible uses.

Silicones in Harsh and Demanding Environments

Silicones in Harsh and Demanding Environments

Silicones are widely recognized as the material of choice for applications that involve extreme environmental conditions.
Their unique molecular structure provides exceptional flexibility, heat resistance, and electrical insulation properties, making them I deal for use in modern electronics and other demanding environments.

Key Properties:

1.Thermal Stability:

- Silicones can withstand extreme temperatures, both high and low, without losing their properties.
- **Thermal Resistance Range:** Operates effectively across a wide temperature range, from -55°C to 300°C.
- **Benefit:** Provides more reliable performance at sustained high temperatures.

2.Flexibility:

- Silicones maintain elasticity even under severe stress, providing **maximum stress relief** from thermal cycling.
- **Thermal Cycling**: This characteristic is especially important in electronics, where components undergo repeated heating and cooling.
- **Benefit:** Reduces the risk of cracking or failure, improving overall durability.

3.Dielectric Strength and Insulation:

- Excellent electrical insulation properties, with **high dielectric strength**.
- **Insulation Resistance:** Provides stable insulation performance under both dry and humid conditions.
- **Benefit:** Ensures safety and reliability in electrical applications.

4.Resistance to UV Radiation:

- Silicones exhibit stronger resistance to UV degradation compared to other polymers.
- **UV Resistance:** Prevents material degradation when exposed to sunlight or other UV sources for prolonged periods.
- **Benefit:** Ideal for outdoor and long-term exposure applications.

5.Versatility in Design and Assembly:

- Due to their flexibility, silicones can be molded into various shapes and sizes to fit the specific design requirements of electronic components and other demanding applications.
- **Benefit:** Enables innovative and adaptable designs for modern electronics.

Silicone Will Do It Better!

Cure chemistries

Curing is the process by which the liquid (wet) silicone is converted into a solid form. During this process, the silicone polymer chains and other elements of the material bind together in a process called crosslinking. MicroCoat offers multiple cure mechanisms in our product line, providing designers and engineers with

Moisture Cure

These materials react with moisture (humidity) in the atmosphere to drive the crosslinking process. The moisture-cure crosslinking process produces a small amount of byproduct. Depending on the type of moisture cure, some of these byproducts can be corrosive to copper and yellow metals. For electronics applications, engineers will typically prefer an alkoxy moisture cure, which produces only non-corrosive methanol.

MicroCoat offers one component and two component moisture cure materials. Single component materials arrive from MicroCoat completely mixed and ready to use. The cure rate of single component materials is limited by the rate at which the material can absorb moisture from the atmosphere.

MicroCoat two component moisture cure materials are separate components (Part A and Part B) that must be mixed prior to use.

The curative is contained within one of the components, which allows these products to cure rapidly, speeding production in customer manufacturing environments. The mix ratio of two component systems may be fixed or variable, depending on the composition of the formula. These products are typically meter-mixed for precise control.

Addition Cure

Addition cure materials arrive from MicroCoat as separate components (Part A and Part B) that must be mixed in a specific ratio prior to use. Everything in these materials is contained within either the two components are mixed, the platinum catalyzed reaction occurs automatically – no added moisture or energy is necessary to be accelerated with heat). Two component addition cure materials crosslink very uniformly and predictably To any depth desired – allowing for deep section

In addition, these materials do not absorb any constituent from the atmosphere nor release any byproduct – making them very dimensionally stable – all shrinkage and reducing stress on surrounding components. Addition cure materials have very limited adhesion, further reducing stress on components. Certain contaminants can interfere with the platinum cure system (“platinum inhibition”), so proper industrial hygiene is necessary when working with these materials.

UV Cure & UV/Dual Cure

MicroCoat UV Cure and UV / dual cure materials are premixed and arrive ready to use. Once dispensed, these materials require energy to drive the crosslinking process. This energy comes from UV light, traditionally from a broad-spectrum mercury lamp, but more recently from a narrow spectrum LED lamp. Our UV only either a broad-spectrum UV system or a **365nm LED** UV system. For the broad-spectrum UV system, we

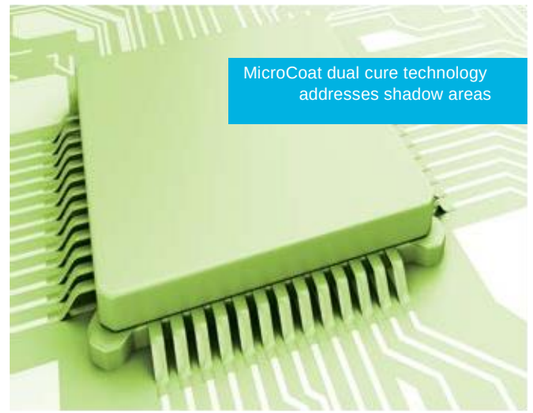
Use a dosage of 4,000 mJ/ cm . Once exposed to sufficient UV energy, the crosslinking process occurs very rapidly — often as quickly as 3 - 5 seconds.

UV materials will not cure without exposure to UV light. The depth of cure is limited by the degree to which the UV light photons can penetrate the material and whether or not there are any obstructions which prevent the UV light from reaching all the material (shadow areas). UV only materials can typically cure **10 - 20mm** in a single pass. UV/dual cure materials typically cure to a depth of ~**1 mm under UV light**, with the balance of the material curing via a Moisture cure mechanism

Once the primary UV cure is complete, these dual cure materials will draw moisture from the atmosphere to drive crosslinking of any material that did not receive sufficient UV exposure during the primary cure. This includes areas that exceed the penetration depth of the material

The dual cure mechanism also allows these materials to develop good adhesion to the underlying substrate.

amount of byproduct, so engineers and designers of electronics will typically prefer an alkoxy secondary cure.



MicroCoat dual cure technology addresses shadow areas

MicroCoats **R&D** center of excellence and innovation **delivers results**.

Industry relies on silicones. Thousands of consumer, business, medical, and military electronic systems depend on silicones to seal, bond, and encapsulate electrical parts in order to protect delicate components and modules in harsh and demanding environments. Companies turn to MicroCoat for electronics grade alkoxy silicones that enable and enhance their technological innovations.

PCBs & Power Electronics

EV & Battery

Renewable Energy

LED & Lighting

Medical On-body

Aerospace

Consumer Electronics

Telecom

Solar

MicroCoat scientists can modify silicone properties such as:

LOW **HARDNESS** HIGH

Provides thermal and physical stress relief
• Allows components to expand and contract at different rates without crowding/contacting/harming each other
• Absorbs shock so vibration does not get transmitted to components
Best for: Dense topography, high thermal environments

Provides abrasion and impact resistance
• Protects raised, delicate components from being broken or knocked off
• Protects integrity of entire board/build against violent jolts and collisions
Best for: Delicate topography, protruding components, punishing environments

LOW **VISCOSITY** HIGH

Provides speedier and assured coverage throughout
• High-speed application and superior 'wet out' ability
• Easily flows into tight spaces, under components, and through vias
Best for: Intricate architecture, delicate potting, high-speed manufacturing, automated dispensing

Provides precise flow and distance spread control
• Allows for extremely targeted 'spot' application with no spread into 'keep-out' areas
• Permits damming and filling of larger, tightly defined areas
• Thicker application provides extra protection and vibration damping
Best for: Staking, laminating, filling large gaps, vertical surfaces

LOW **ADHESION** HIGH

Provides more controlled adhesion
• Permits future access to components for reworking and repair
• Coating will come off clean leaving substrate ready for reapplication
Best for: Products that reach 'failure mode' or require regular maintenance

Permanent adhesion, including low energy surfaces
• Simplifies process with no primer or corona treatment necessary
• Various types of substrates may be permanently bonded together
Best for: Assembly of difficult substrates, protecting unique technologies

LOW **THERMAL CONDUCTIVITY** HIGH

No conductive fillers, no fuss
• Meets the needs of most standard applications
Best for: Products emitting minimal heat, cost effectiveness

Actively moves heat away from components
• Protects components from thermal damage
• Standard thermal filler packages provide pathway for heat to travel & dissipate
Best for: Semiconductors (Si, SiC, GaN), batteries, LED lighting, power supplies

THIXOTROPY

When you need absolute precision during dispensing, we can adjust thixotropy ratios to achieve it with your machinery. So when the pressure stops, the flow stops, and the bead holds its shape perfectly. Crucial for dot placement, bead formation, dam contours, and precise injections into extremely small crevices with no sagging, no spreading, and no dripping.

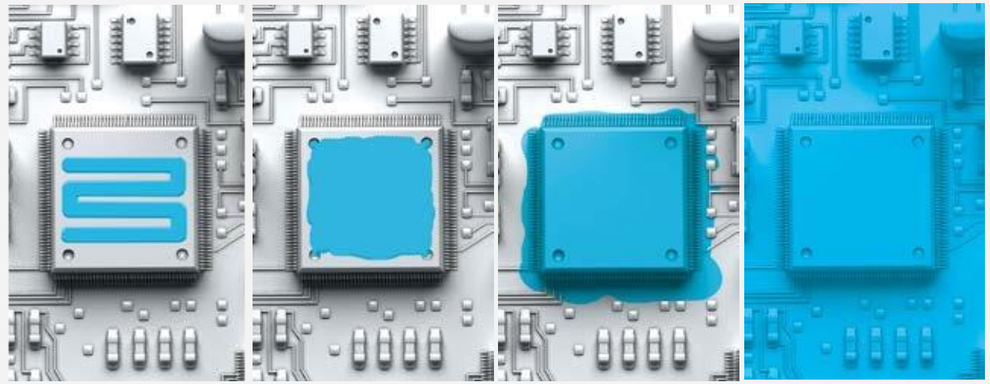
CURE TIME

Depending on your application and your process — and even the precise set-up of your line — we can adjust and fine tune our silicone formulations to cure as quick (or not) as you need, and offer you tack-free handling in less than 5 seconds.

Impact of rheology: Viscosity & Flowability

Just as crucial as achieving the required material performance is assuring the silicone is getting to where it needs to go using the dispensing equipment on your line. This is where proper viscosity and flowability selection is critical.

Non-Flowing Paste | High Viscosity Semi-Flowable | Medium Viscosity Flowable | Low Viscosity Sprayable



Higher viscosity provides greater control of speed and distance of flow to prevent spreading into safe areas, while enabling thicker coating layers in one pass.

Lower viscosity aids high-speed production techniques such spraying, flow coating,

through vias or under components.

MCT - A leader in **UV silicone**

MicroCoat is the **market leader** of **UV/dual cure silicones**. Our click-cure chemistry provides an unparalleled level of speed to your manufacturing process. With each generation, our chemists have improved our products, resulting in UV silicones with a faster secondary alkoxy moisture cure that offer better dielectric properties and superior adhesion.

MCT - Committed to *your* **success**

As an innovator and manufacturer of silicones, MicroCoat enables our customers to develop new and sustainable ways of doing business.

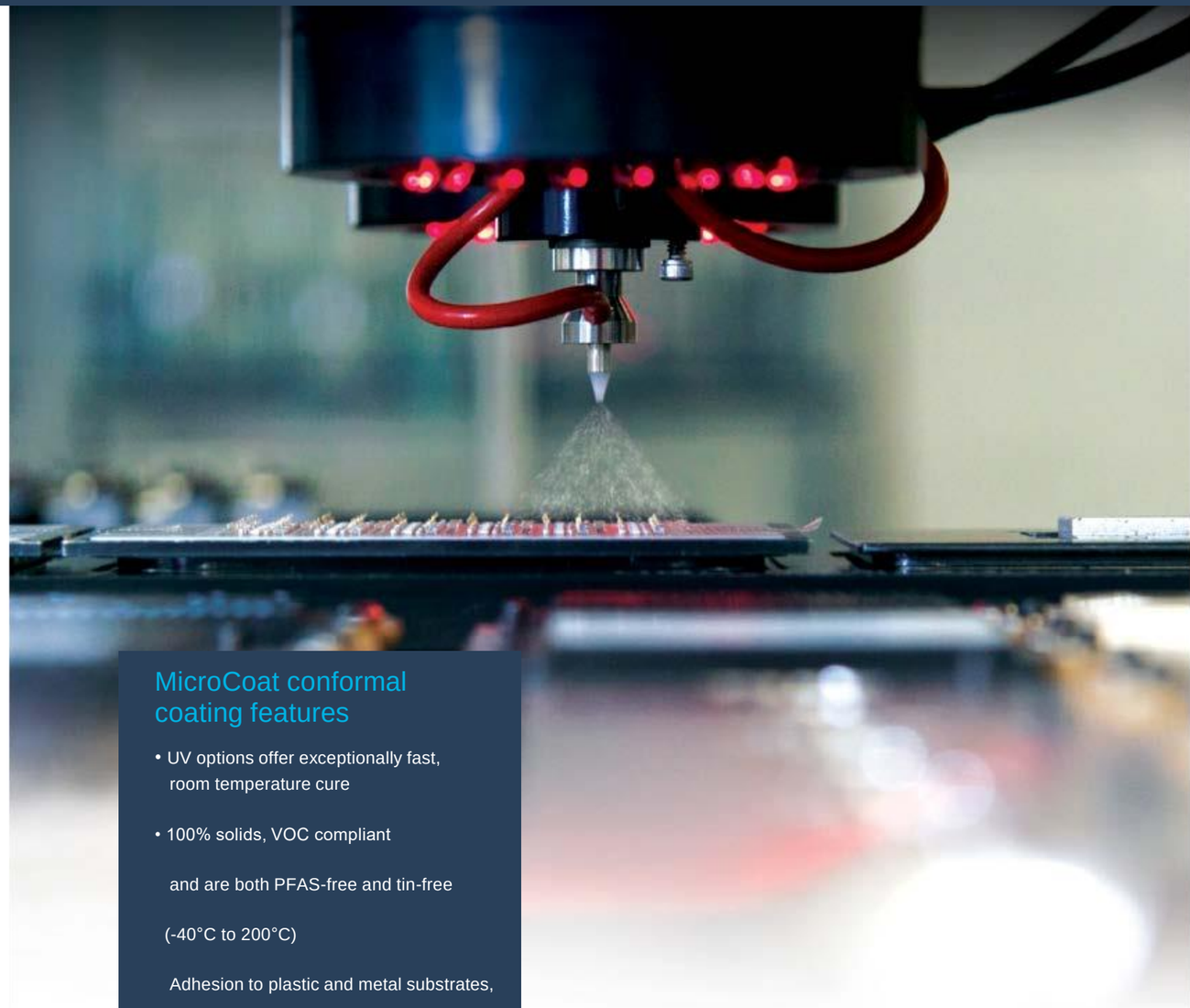
Mindful of our environmental impact, our products are PFAS and solvent free, so there is no harmful VOC emissions or outgassing.

Conformal Coatings

Essential Attributes	MCT 855FC	MCT 521	MCT 852FC
	Sprayable		**Sprayable, Flowable, or Dip Coating**
	PHYSICAL PROPERTIES		
Appearance	Clear, sprayable	Clear, sprayable	Clear, flowable
Cure Chemistry	UV Alkoxy Dual Cure	Alkoxy Moisture Cure	UV Alkoxy Dual Cure
Viscosity (cPs)	670	450	1,800
Tensile Strength	13 psi	65 psi	17 psi
Elongation	125%	95%	235%
Hardness (Shore A)	8	40	8
Flammability Class (UL94)	V-1 V-0 *(pending)*	V-1	V-1 V-0 *(pending)*
Specifications	UL 746E certified	UL 746E certified	~~UL 746E certified~~ ISO 10993-5
	ELECTRICAL PROPERTIES		
Volume Resistivity	2.50×10^{5} Ω-cm	1.55×10^{4} Ω-cm	2.21×10^{0} Ω-cm
Dissipation Factor	0.0035 @100 Hz 0.0002 @100 kHz	0.0012 @100 Hz 0.0001 @100 kHz	0.0010 @100 Hz 0.0003 @100 kHz
Dielectric Constant	1.18 @100 kHz	2.25 @100 kHz	1.67 @100 kHz
Dielectric Strength	~~>13 kV/mm~~ >330 V/mil	~~>13.5 kV/mm~~ >340 V/mil	~~>17.6 kV/mm~~ >447 V/mil

Conformal coatings conform to the contours of PCBs to protect circuits from moisture, dirt, chemicals, dust, and other environmental contaminants. MicroCoats conformal coatings are ***solvent free*** and offer greater flexibility and vibration dampening than other types of coating materials.

As component density continues to increase, MicroCoats advanced conformal coatings provide the necessary electrical isolation to ensure long and trouble free service life. Our 4th generation UV/dual cure technology has further expanded and enhanced the electrical performance of these vital materials.



MicroCoat conformal coating features

- UV options offer exceptionally fast, room temperature cure
- 100% solids, VOC compliant

  and are both PFAS-free and tin-free

  (-40°C to 200°C)

  Adhesion to plastic and metal substrates,
- Electronics grade and UL certifications
- Can be applied by spray coating,

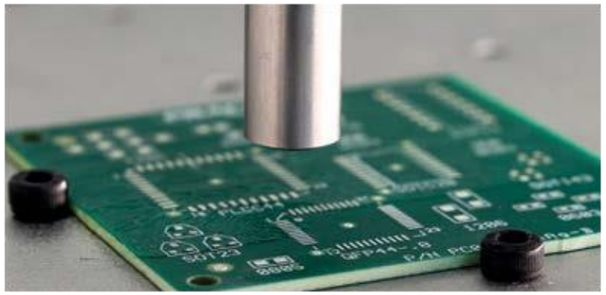
  hand dispense, flow coating, brushing,

UV Alkoxy Dual Cure Sprayable Silicone

MCT 855

MCT 855 is a UV curable silicone sprayable conformal coating. This non-corrosive, single component silicone cures to a solid elastomer in seconds upon exposure to ultraviolet (UV) light. MCT 855 is UL 746E certified and has a V-1 rating for flammability. This silicone contains a standard UV tracer for quality control and is easily applied using standard PCB spray coating equipment.

After the initial UV cure, MCT 855 has a secondary moisture cure which enhances adhesion and ensures no unreacted coating remains in shadow areas. This next generation of MicroCoat UV/dual cure silicone conformal coatings cures in a fraction of the time needed for traditional conformal coatings.



The speed and efficiency of UV curing can practically eliminate racking and WIP, is far more energy efficient, and requires a much smaller manufacturing footprint thereby reducing your total cost of ownership.

Offering a faster, more reliable cure, our 800 series of products is an attractive alternative to solvent-based silicone and epoxy solutions.

Used for:

- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components and harsh environments
- Conformal coating, sealing, and potting

	MCT 855
Appearance & Form	Clear. sprayable
Cure Chemistry	UV Alkoxv Dual Cure
Viscosity (cPs) Brookfield LV CPA - 52Z @ 1.5 rpm	670
Refractive Index (uncured)	1.40
Tensile Strength ASTM D412	13 psi
Elongation ASTM D412	125%
Hardness (Shore A) ASTM D2240	8
Specific Gravity ASTM D1875	0.98
Volume Resistivity (Ω-cm) ASTM D257	2.50x10^{15}
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0035 0.0002
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	1.18 / 1.18
Dielectric Strength	>13 kV/mm >330 V/mil
Shadow Area Cure	Ye s
UV Tracer	Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1 V-0 *(pending)*
Listings / Specifications	UL 746E
Compliance	REACH, PFAS free, 50 state VOC

General Purpose Alkoxy Conformal Coating

MCT 5210

MCT 5210 is a balanced-performance translucent sprayable silicone featuring a rapid room temperature alkoxy moisture cure that can be further accelerated with moderate heat. This **solvent-free** conformal coating seals and protects components from dust, moisture, and environmental hazards. It's a ready-to-use, single component silicone that cures to a resilient elastomer that is tough, yet compliant enough to reduce strain on electronic components.

MCT 5210 offers simple "dispense and forget" processing and skins over in as little as 10 minutes. This silicone is UL 746E certified and has a V-1 rating for flammability.

As one of our 500 series electronics-grade silicones, MCT 5210 is a neutral cure (alkoxy) sealant suitable for spraying or flow coating. When a non-corrosive product is required, MCT 5210 is an ideal coating with unprimed adhesion to many substrates that:

- Offers a strong bond for applications where adhesion is critical
- Provides a barrier coating to protect against moisture and dust
- Helps dampen vibrations

MCT 5210 contains a standard UV tracer for quality control.

Used for:

- Protecting sensitive electronic components and circuit boards
- Thin-section encapsulation
- General electronics/industrial coating applications requiring a non-corrosive product

	MCT 5210
Appearance & Form	Clear. sprayable
Cure Chemistry	Alkoxv Moisture Cure
Viscosity (cPs) Brookfield LV CPA - 52Z @ 1.5 rpm	450
Refractive Index (uncured)	1.40
Skin-Time	<10 min
Tensile Strength ASTM D412	65 psi
Elongation ASTM D412	95%
Hardness (Shore A) ASTM D2240	40
Specific Gravity ASTM D1875	0.98
Volume Resistivity (Ω-cm) ASTM D257	1.55x10^{14}
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0012 0.0001
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	2.25 / 2.25
Dielectric Strength ASTM D149	>13.5 kV/mm >340 V/mil
UV Tracer	Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1
Listings / Specifications	UL 746E
Compliance	REACH, PFAS free, 50 state VOC

UV Alkoxy Dual Cure Flowable Silicone

MCT 852FC

This non-corrosive, single component silicone will cure to a solid elastomer in seconds upon exposure to ultraviolet (UV) light. MCT 852FC has a secondary, neutral alkoxy moisture cure for enhanced adhesion and shadow cure. With a viscosity of ~ 1,800 cPs, this formulation is ideal for applying thicker layers of coating for applications requiring additional protection.

MCT 852FC's secondary moisture cure begins immediately and can develop full adhesion in hours. The speed and efficiency of UV curing can practically eliminate racking and WIP, reducing the total cost of ownership. UV curing lamps are far more energy efficient and need less manufacturing space than the ovens required for traditional heat-cured solutions, further reducing operational costs.

MCT 852FC has been independently tested and meets the standards of ISO 10993-5. This conformal coating contains a standard UV tracer for quality control.

Used for:

- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components and harsh environments
- Applications that require a non-cytotoxic material
- Conformal coating, sealing, and potting

	MCT 852FC
Appearance & Form	Clear. flowable
Cure Chemistry	UV Alkoxv Dual Cure
Viscosity (cPs) Brookfield LV CPA-52Z @ 1.5 rpm	1,800
Refractive Index (uncured)	1.40
Tensile Strength ASTM D412	17 psi
Elongation ASTM D412	235%
Hardness (Shore A) ASTM D2240	8
Specific Gravity ASTM D1875	0.98
Volume Resistivity (Ω-cm) ASTM D257	2.21x10^{14}
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0010 0.0003
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	1.67 / 1.67
Dielectric Strength ASTM D149	>17.6 kV/mm >447 V/mil
Shadow Area Cure	Ye s
UV Tracer	Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1 V-0 *(pending)*
Listings / Specifications	UL 746E ISO 10993-5
Compliance	REACH, PFAS free, 50 state VOC

ISO 10993 Standards

The ISO 10993 series of standards evaluate the biocompatibility of medical devices based on material, contact type, and duration of contact. These standards cover a number of biological safety scenarios and enable medical device manufacturers to manage biological risk.

MicroCoat is proud to have a number of products independently tested that meet the ISO 10993

There are several tests that make up the ISO 10993 standards, each focused on a different safety factor. Based on the applications that use MicroCoat silicones, we have selected to test our products to three standards:

ISO 10993-5: Cytotoxicity

This test assesses the in vitro cytotoxicity of medical devices. These methods specify the incubation or extracts of a device either directly or through diffusion. The test methods used are designed to determine the biological response of mammalian cells in vitro using appropriate biological parameters.

ISO 10993-10: Skin Sensitization

The test used for this standard assesses medical devices and their constituent materials with regard to their potential to induce skin sensitization. This test looks at repeated exposure to skin.

ISO 10993-23: Irritation

This test specifies the procedure for the assessment of medical devices and their constituent materials

This test focuses on the first interaction of the material to the skin.

The final selection of a material depends on application-specific performance criteria that should be confirmed by the medical device designer's own testing. While MicroCoat is happy to provide ISO 10993 test data to our customers, medical device and wearable manufacturers are ultimately responsible for submitting their final product to the appropriate governing body to receive certifications.

Product Data Sheet

RoHS/WEEE, REACH, and Halogen Free

MicroCoat Technologies
http:www.m-coat.com
Unparalleled in Polymer Coatings and Adhesives Technology

MicroCoat Encapsulants, Potting & Gels Silicones

	MCT 8061	MCT 8055	MCT 8075	MCT 60223	MCT 80754	MCT 80755	MCT 6025	MCT 60251	MCT HV60
Essential Attributes	Sprayable / Flowable Encapsulants		Sensor Coating Encapsulant	Soft Encapsulating Gels			Clear encapsulant	Filled Encapsulant /	High Voltage encapsulant
	PHYSICAL PROPERTIES								
Appearance	Clear, sprayable	Clear, flowable	Clear, semi-flowable	Clear, flowable	Clear, semi-flowable	Clear, semi-flowable	Clear, flowable	White, gray flowable	Off-white, flowable
Cure Chemistry	UV only	UV Alkoxy Dual Cure	UV Alkoxy Dual Cure	2k Addition Cure	UV only	UV only	2k Addition Cure	2k Addition Cure	2k Addition Cure
Viscosity (cPs)	1,000	5,500	50,000	500 (mixed, 1:1)	50,000	55,000	6,300 (mixed, 1:1)	5,700 (mixed, 1:1)	7,500 (mixed, 1:1)
Tensile Strength	-	18 psi	15 psi	-	160 psi	-	550 psi	420 psi	300 psi
Elongation	-	295%	185%	-	520%	-	170%	70%	30%
Hardness (Shore A)	-	8	8	15 (Shore 000)	65 (Shore 000)	-	35	52	70
Thermal Expansion Flammability	-	-	-	400 ppm/°C	-	-	350 ppm/°C	250 ppm/°C	250 ppm/°C
Class (UL94)	-	V-1	V-1 *(pending)*	-	-	-	HB *(pending)* V-1 *(pending)*	V-0 *(pending)*	V-0 *(pending)*
Specifications	-	UL 746E certified ISO 10993-5	ISO 10993-5 ISO 10993-10 ISO 10993-23 UL 746E *(pending)*	-	-	-	-	-	-
	ELECTRICAL PROPERTIES								
Volume Resistivity	-	2.11x10 Ω-cm 0.0012 @100 Hz	-	1.90x10⁴Ω-cm 0.0024 @100 Hz	1.47x10⁴Ω-cm 0.0002 @100 Hz	-	7.60x10⁴Ω-cm 0.0016 @100 Hz	7.20x10¹³Ω-cm 0.0317 @100 Hz	1.60x10⁵Ω-cm 0.0400 @100 Hz
Dissipation Factor	-	0.0006 @100 kHz	-	0.0001 @100 kHz	0.0001 @100 kHz	-	0.0007@100 kHz	0.0058 @100 kHz	0.0094 @100 kHz
Dielectric Constant	-	2.07 @100 kHz	-	2.80 @100 kHz	2.40@100 kHz	-	2.52 @100 kHz	3.23 @100 kHz	3.16 @100 kHz
Dielectric Strength	-	>15.9 kV/mm >405 V/mil	-	13 kV/mm 330 V/mil	>14.4 kV/mil >365 V/mil	-	26.5 kV/mil 673 V/mil	>22 kV/mil >559 V/mil	32 kV/mil 813 V/mil

*Preliminary data

UV Cure Sprayable Silicone Encapsulant

MCT 8061

MCT 8061 is a low viscosity, pourable, or sprayable encapsulant. Its low viscosity ensures the material flows easily around components for thorough wet out and to prevent air entrapment. MCT 8061 is a UV cure silicone with no secondary moisture cure, offering very low adhesion. This non-corrosive, single component silicone will cure to a solid elastomer in seconds upon exposure to ultraviolet (UV) light.

This high-performance material will cure up to 20mm deep in a single pass under UV light. With a typical viscosity of ~1,000 cPs, MCT 8061 enhances reliability of delicate components, and provides both stress and shock relief.

Used for:

- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components and harsh environments
- Potting

	MCT 8061
Appearance & Form	Clear, sprayable
Cure Chemistry	UV only
Viscosity (cPs) Brookfield RV #5 @ 10 rpm	1,000
Shadow Area Cure	No
Compliance	REACH, PFAS free, 50 state VOC

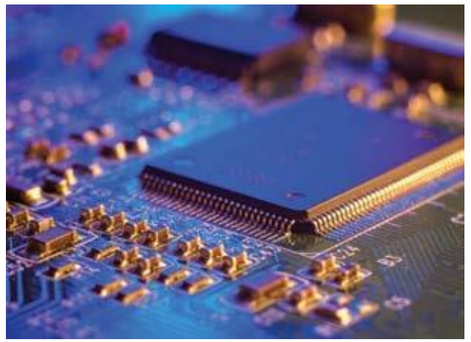
UV Alkoxy Dual Cure Flowable Silicone

MCT 8055

This non-corrosive, single component silicone will cure to a solid elastomer in seconds upon exposure to ultraviolet (UV) light. MCT 8055 has a secondary, neutral alkoxy moisture cure for enhanced adhesion and shadow cure. With a viscosity of 5,500 cPs, MCT 8055 flows readily to surround the complex geometry of modern circuitry design.

MCT 8055 is UL 746E certified, and has been independently tested to meet ISO 10993-5 standards.

MCT 8055 contains a standard UV tracer for quality control.



Used for:

- Sealing sensitive components and gaps against moisture and harsh environments
- Coating and protecting fiber optic cables
- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Conformal coating, sealing, and potting

	MCT 8055
Appearance & Form	Clear, flowable
Cure Chemistry	UV Alkoxv Dual Cure
Viscosity (cPs) Brookfield LV CPA-52Z @ 1.5 rpm	5,500
Refractive Index (uncured)	1.40
Tensile Strength ASTM D412	18 psi
Elongation ASTM D412	295%
Hardness (Shore A) ASTM D2240	8
Specific Gravity ASTM D1875	0.98
Volume Resistivity (Ω-cm) ASTM D257	2.11x1(14
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0012 0.0006
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	2.07 / 2.07
Dielectric Strength ASTM D149	>15.9 kV/mm >405 V/mil
Shadow Area Cure	Ye s
UV Tracer	Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1
Listings / Specifications	UL 746E ISO 10993-5
Compliance	REACH, PFAS free, 50 state VOC

Sensor Coating/Encapsulant

UV Alkoxy Dual Cure Silicone Sensor Coating

MCT 8075

With a viscosity of ~50,000 cPs, MCT 8075 is a translucent silicone that clings readily electronics to coat and protect sensor systems. This non-corrosive, single component silicone will cure to a soft elastomer in seconds upon exposure to ultraviolet (UV) light, making it ideal for stress and strain relief, assembly of sensors, and protection of delicate sensor detector elements. The UV primary cure provides initial crosslinking in 3-5 seconds, coupled with a secondary alkoxy moisture cure for enhanced adhesion and shadow area curing.

MCT 8075 is soft and compliant enough to be used for medical on-body applications, yet tough enough to hold up in automotive applications and other harsh and demanding environments.

This material meets the standards of ISO 10993-5, 10993-10, and 10993-23.

Used for:

- Sensor coating
- Medical device electronics
- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components and harsh environments
- Formed-in-place gasketing
- Sealing and potting

	MCT 8075
Appearance & Form	Clear. semi-flowable
Cure Chemistry	UV Alkoxv Dual Cure
Viscosity (cPs) Brookfield RV #5 @ 20 rpm	50,000
Tensile Strength ASTM D412	15 psi
Elongation ASTM D412	185%
Hardness (Shore A) ASTM D2240	8
Specific Gravity ASTM D1875	0.98
Shadow Area Cure	Ye s
UV Tracer	Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1 *(pending)*
Listings / Specifications	ISO 10993-5 ISO 10993-10 ISO 10993-23 UL 746E *(pending)*
Compliance	REACH, PFAS free, 50 state VOC

Soft Encapsulating Gels

Soft Dielectric Potting Gel (2-part silicone)

MCT 6023 *Product Development Pipeline*

MCT 6023 is a platinum catalyzed, addition cure, dielectric potting gel. This is a specialized silicone encapsulant, with low viscosity for easy flowability around complex components. MCT 6023 cures to an extremely soft elastomer, with no unreacted components remaining after cure. MCT 6023 retains much of the stress relief qualities of a liquid while providing the dimensional stability of an elastomer, protecting even the most delicate components from shock and vibration as well as thermal and mechanical stress. In addition, MCT 6023 protects circuits from the harmful effects of moisture, dust, and other contaminants, and provides electrical insulation for high voltage circuits. MCT 6023 cures clear, allowing for easy inspection of components.

Designed to protect the most delicate circuits and assemblies, MCT 6023's extremely low viscosity allows for excellent flow under and around incredibly complex geometries, while minimizing the stress on components during the potting process itself. Convenient 1:1 mix ratio and extended working time further simplifies processing by allowing for complete component wet out and thorough deaeration before curing.

Used for:

- Protecting delicate components
- Sealing PCB assemblies
- Encapsulating or potting electronic devices

	MCT 6023
Appearance & Form	Clear, flowable
Cured Appearance	Clear gel
Cure Chemistry	2k Addition Cure 1:1 (v:v)
Viscosity (cPs) Brookfield HBT #2 @ 20 rpm	Part A: 550 Part B: 450 Mixed: 500
Hardness (Shore 000) ASTM D2240	15
Specific Gravity ASTM D1875	0.95
Thermal Expansion (CTE) (ppm/°C) ASTM E831	400
Volume Resistivity (Ω-cm) ASTM D257	1.90×10^{14}
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0024 0.0001
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	2.79 / 2.80
Dielectric Strength ASTM D149	13 kV/mm 330 V/mil
Working Time ASTM D3532	>2 hrs @ RT
Cure Time ASTM D3532	72 hrs @ RT 3 hrs @ 140°F (6 0 °C) 30 min @ 212°F (100°C) 15 min @ 302°F (150°C)
Compliance	REACH, PFAS free, 50 state VOC

Lab preliminary data

UV Cure Self-Leveling Soft encapsulant/Encapsulant

MCT 8074

Designed to maximize vibration damping, MCT 8074 is a very soft, translucent encapsulant/encapsulant. MCT 8074 is a low strength silicone with limited adhesion to reduce strain on delicate components. This non-corrosive, single component silicone will cure to a compliant elastomer in seconds upon exposure to ultraviolet (UV) light to a depth of up to 20mm in a single pass.

With a viscosity of ~50,000 cPs, it flows predictably during application. After curing, MCT 8074 has a solid surface that is soft (**not tacky**) that protects delicate components, and provides both stress and shock relief.

Used for:

- Printed circuit/wiring boards
- Flexible hybrid electronics
- Formed-in-place gasketing
- Rigid electronics
- Sensitive components and harsh environments
- Potting

	MCT 8074
Appearance & Form	Clear. semi-flowable
Cure Chemistry	UV only
Viscosity (cPs) Brookfield HB #4 @ 20 rpm	50,000
Tensile Strength ASTM D412	160 psi
Elongation ASTM D412	520%
Hardness (Shore 000) ASTM D2240	65
Specific Gravity ASTM D1875	0.98
Volume Resistivity (Ω-cm) ASTM D257	$1.47x10^{14}$
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0002 0.0001
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	2.40 / 2.40
Dielectric Strength ASTM D149	>14.4 kV/mm >365 V/mil
Shadow Area Cure	No
UV Tracer	No
Service Temp	-40°F to 392°F (-40°C to 200°C)
Compliance	REACH, PFAS free, 50 state VOC

UV Cure encapsulant & Encapsulant Soft Gel

MCT 8075

MCT 8075 is an incredibly soft, non-corrosive, single component gel that is an ideal encapsulant or encapsulant. It will cure in seconds upon exposure to ultraviolet (UV) light, forming a soft - yet **tacky** - flexible, resilient cushion which provides shock relief and protects delicate circuitry and interconnections from thermal and mechanical stresses. MCT 8075 also isolates circuits from moisture and other contaminants while providing insulation for high voltage electrical currents.

MCT 8075 is a clear encapsulant/encapsulant, designed to maximize vibration damping. It is a low strength silicone with limited adhesion which reduces strain on delicate components. Upon exposure to UV light, it will cure to a depth of 20mm in a single pass, dramatically increasing manufacturing throughput.

With a viscosity of ~55,000 cPs, MCT 8075 flows predictably during application.

Used for:

- Potting of delicate components
- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components and harsh environments

	MCT 8075
Appearance & Form	Clear. semi-flowable
Cure Chemistry	UV only
Viscosity (cPs) Brookfield HB #4 @ 20 rpm	55,000
Specific Gravity ASTM D1875	0.98
Penetration ASTM D217	165
Shadow Area Cure	No
UV Tracer	No
Service Temp	-40°F to 392°F (-40°C to 200°C)
Compliance	REACH, PFAS free, 50 state VOC

Clear & Filled encapsulant

Clear Flowable Electronics encapsulant
(2-part silicone)

MCT 6025 *Product Development Pipeline*

MCT 6025 is a flowable, platinum catalyzed, addition cure, durable encapsulant with good dielectric properties and flame resistance. Once mixed, this highly transparent silicone elastomer will cure at room temperature in 24 hours. The cure time can be significantly accelerated with moderate heat. The high (>90%) transparency of MCT 6025 allows for easy inspection of components.

The convenient 1:1 mix ratio provides for simplified production processing compared with off-ratio products. In addition, MCT 6025 provides good flowability, long working time, and low viscosity for complete wet out and thorough deaeration.

Used for:
- LED lighting encapsulation
- Power supplies
- Connectors & sensors
- Industrial controls
- Transformers
- Amplifiers
- High voltage resistor packs
- Relays

Flowable White Filled Encapsulant/encapsulant
(2-part silicone)

MCT 6051 *Product Development Pipeline*

MCT 6051 is a platinum catalyzed, room temperature, addition cure silicone for potting and encapsulant applications requiring thermal conductivity. The cure rate of MCT 6051 can be dramatically accelerated with moderate heat. MCT 6051 has good flowability and moderate thermal conductivity, with excellent dielectric properties and flame resistance.

MCT 6051 is easy to process and calibrate on the manufacturing floor, featuring a 1:1 mix ratio with similar viscosities of Part A and Part B. Long working times facilitate deaeration. Application methods include manual mixing and pouring, or automated mixing and dispensing.

Used for:
- Photovoltaic junction boxes
- Power inverters/power supplies
- Industrial controls, transformers, and amplifiers
- High voltage resistor packs and relays
- Sensor electronics
- Security coatings
- General potting applications

	MCT 6025	MCT 6051
Appearance & Form	Clear, flowable	White, gray flowable
Cured Appearance	High Transparency	Opaque white, gray
Cure Chemistry	2k Addition Cure 1:1 (v:v)	2k Addition Cure 1:1 (v:v)
Viscosity (cPs) Brookfield HBT #4 @ 20 rpm ASTM E3119	Part A: 7.200 Part B: 5.600 Mixed: 6,300	Part A: 6.000 Part B: 5.400 Mixed: 5,700
Tensile Strength ASTM D412	550 psi	420 psi
Elongation ASTM D412	170%	70%
Hardness (Shore A) ASTM D2240	35	52
Specific Gravity ASTM D1875	Part A: 0.98 Part B: 0.98	Part A: 1.60 Part B: 1.60
Thermal Conductivity ASTM D5470	0.17 w/m.K	0.60 w/m.K
Thermal Expansion (CTE) (ppm/°C) ASTM E831	350	250
Volume Resistivity (Ω-cm) ASTM D257	$7.60x10^{14}$	$7.20x10^{13}$
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0016 / 0.0007	0.0317 / 0.0058
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	2.53 / 2.52	3.38 / 3.23
Dielectric Strength ASTM D149	26.5 kV/mm 673 V/mil	>22 kV/mm >559 V/mil
Working Time ASTM D3532	2 hrs @ RT	>2 hrs @ RT
Cure Time ASTM D3532	24 hrs @ RT 30 min @ 140°F (60°C)	24 hrs @ RT 30 (60°C)
Flammability Class (UL 94)	HB (3mm) *(pending)* V-1 (6mm) *(pending)*	V-0 *(pending)*
Compliance	REACH, PFAS free, 50 state VOC	REACH, PFAS free, 50 state VOC

Lab preliminary data

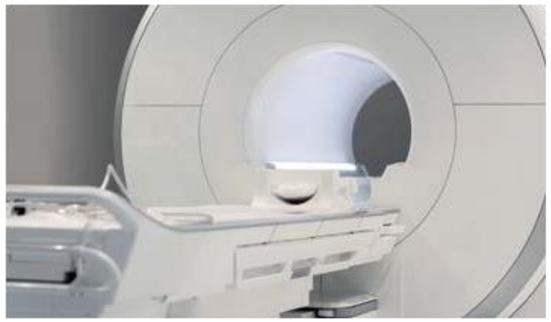
High Voltage encapsulant

High Voltage encapsulant
(2-part silicone)

MCT 60HV *Product Development Pipeline*

MCT 60HV is a UL 94 V-0 rated, dual component, platinum catalyzed, addition cure potting encapsulant that forms a durable, flexible elastomer with extremely low volatile content to protect electronic components. This low viscosity potting compound uses a 1:1 (v:v) mix ratio for simplified processing, and is highly flowable for straightforward dispensing in your application.

Its working time of nearly 2 hours allows for deaeration and vacuum, and MCT 60HV will cure in 8 hours at room temperature. If desired, this cure time can be accelerated to as little as 30 minutes by applying heat at 140°F (60°C). MCT 60HV exhibits excellent high temperature resistance and electrical isolation for use in high voltage systems such as power supplies.



MCT 60HV is incredibly stable, with a low coefficient of thermal expansion, and formulated with low-volatility components. MCT 60HV is designed to withstand long term sustained voltages of up to 32kV/mm.

Used for:
- High voltage power supplies
- Medical imaging equipment
- EV powertrain
- Energy storage conversion
- Protecting and isolating electrical components
- High voltage switchgear

	MCT 60HV
Appearance & Form	Off-white, flowable
Cured Appearance	off-white
Cure Chemistry	1:1 (v:v)
Viscosity (cPs) Brookfield HB #4 @ 20 rpm	Part A: 9,400 Part B: 6.000 Mixed: 7,500
Tensile Strength ASTM D412	300 psi
Elongation ASTM D412	30%
Hardness (Shore A) ASTM D2240	70
Specific Gravity ASTM D1875	Part A: 1.60 Part B: 1.60
Thermal Conductivity ASTM D5470	0.38 w/m. K
Thermal Expansion (CTE) (ppm/°C) ASTM E831	250
Volume Resistivity (Ω-cm) ASTM D257	$1.60x10^{15}$
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0400 / 0.0094
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	3.43 / 3.16
Dielectric Strength ASTM D149	32 kV/mm 813 V/mil
Chemical Resistance Gasoline Brake Fluid Antifreeze Wheel Cleaner	Ye s Yes Yes Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Working Time ASTM D3532	2 hrs @ RT
Cure Time ASTM D3532	30 min @ 140°F (6 0 °C)
Flammability Class (UL 94)	V-0 *(pending)*
Compliance	REACH, PFAS free, 50 state VOC

Lab preliminary data

Gasketing

Essential Attributes	MCT 8023	MCT 8075	MCT 8025*	MCT 8040	MCT 8041*
	Self-Leveling Gasketing	Semi-Flowable Gasketing		Gasketing Paste	
PHYSICAL PROPERTIES					
Appearance	Translucent, self-leveling	Clear, semi-flowable	Translucent, semi-flowable	Translucent, paste	Opaque, paste
Cure Chemistry	UV only	UV Alkoxy Dual Cure	UV only	UV only	UV only
Viscosity (cPs)	17,500	50,000	65,000	300,000	300,000
Tensile Strength	75 psi	15 psi	-	370 psi	150 psi
Elongation	380%	185%	-	1,200%	1,000%
Hardness (Shore A)	20	8	-	20	20
Flammability					
Class (UL94)	-	V-1 *(pending)*	-	V-1 *(pending)*	-
Specifications	-	ISO 10993-5 ISO 10993-10 ISO 10993-23 UL 746E *(pending)*	-	-	-
ELECTRICAL PROPERTIES					
Volume Resistivity	2.10x10⁹ Ω-cm	-	-	3.01x10⁹ Ω-cm	3.01x10⁹ Ω-cm
Dissipation Factor	0.0013 @100 Hz 0.0005 @100 kHz	-	-	0.0011 @100 Hz 0.0021 @100 kHz	-
Dielectric Constant	2.45 @100 kHz	-	-	3.33 @100 kHz	-
Dielectric Strength	-	-	-	14.1 kV/mm 355 V/mil	-

*Preliminary data

Looking to properly seal joints, fill gaps, limit vibration, prevent leaks, and enhance mounting – all while increasing production throughput on your manufacturing floor? Silicone is an excellent solution for complex formed-in-place (FIPG) or cured-in-place (CIPG) gaskets. MicroCoat silicones contain no solvents, adhere well to many surfaces without primers, and offer extreme stability at extended temperature ranges.

When combined with MicroCoats fast curing technologies, the performance advantages of silicone can be brought to your high-speed production environment. Discover the strength, durability, and stability of MicroCoat silicones for your gasketing needs.

Self-Leveling Gasketing

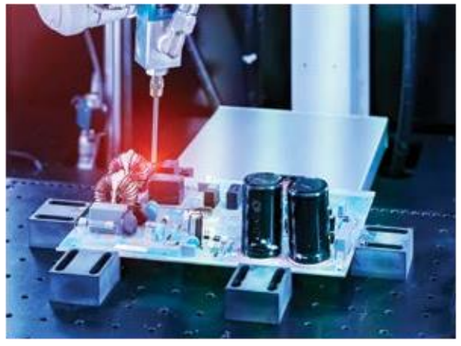
UV Cure
Self-Leveling Silicone

MCT 8023

MCT 8023 is a UV curable self-leveling silicone encapsulant that offers a higher viscosity coating option, while still remaining flowable.

With a viscosity of ~17,500 cPs, MCT 8023 is an ideal cure-in-place gasketing material that offers limited adhesion for simplified re-work. When dispensed into a channel or gasket groove, this material will self-level to provide a smooth mating surface for the enclosure lid. This non-corrosive, single component silicone will cure to a solid elastomer in seconds upon exposure to ultraviolet (UV) light.

When used in a potting application, MCT 8023 enhances reliability of delicate components, and provides both stress and shock relief.



Used for:

- Cured-in-place gasketing
- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Additive manufacturing and 3D printing
- Sensitive components and harsh environments
- Gasketing, sealing, potting, and coating

	MCT 8023
Appearance & Form	Translucent. self-leveling
Cure Chemistry	UV only
Viscosity (cPs) Brookfield RV #4 @ 10 rpm	17,500
Tensile Strength ASTM D412	75 psi
Elongation ASTM D412	380%
Hardness (Shore A) ASTM D2240	20
Specific Gravity ASTM D1875	0.98
Volume Resistivity (Ω-cm) ASTM D257	2.10×10^{14}
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0013 / 0.0005
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	2.45/2.45
Shadow Area Cure	No
UV Tracer	No
Service Temp	-40°F to 392°F (-40°C to 200°C)
Compliance	REACH, PFAS free, 50 state VOC

Semi-Flowable Gasketing

UV Alkoxy Dual Cure
Semi-Flowable Silicone

MCT 8075

With viscosity of 50,000 cPs, MCT 8075 is a translucent silicone that clings readily to components for formed-in-place gasketing, staking, and glob-top applications. This non-corrosive, single component silicone will cure to a soft elastomer in seconds upon exposure to ultraviolet (UV) light, making it ideal for stress and strain relief as well as protection of delicate circuits. It has a secondary, neutral alkoxy moisture cure for enhanced adhesion and shadow cure.

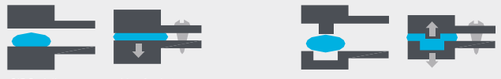
MCT 8075 contains a standard UV tracer for quality control.

Used for:

- Formed-in-place gasketing
- Medical device electronics
- Sensitive components and harsh environments
- Screen printing on flexible seals
- Gasketing, sealing, and potting

	MCT 8075
Appearance & Form	Clear. semi-flowable
Cure Chemistry	UV Alkoxv Dual Cure
Viscosity (cPs) Brookfield RV #5 @ 20 rpm	50,000
Tensile Strength ASTM D412	15 psi
Elongation ASTM D412	185%
Hardness (Shore A) ASTM D2240	8
Specific Gravity ASTM D1875	0.98
Shadow Area Cure	Ye s
UV Tracer	Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1 *(pending)*
Listings / Specifications	ISO 10993-5 ISO 10993-10 ISO 10993-23 UL 746E *(pending)*
Compliance	REACH, PFAS free, 50 state VOC

Two approaches to gasketing



CIPG: Adheres to one side of substrate

FIPG: Adheres to both sides of substrate

CIPG (Cured-in-Place Gasket) provides greater gasket design flexibility and allows the opening and closing of lids to repair components inside.

ideal for non-reenterable enclosures.

UV Cure Semi-Flowable Silicone

MCT 8025 *Product Development Pipeline*

MCT 8025 is a UV curable semi-flowable silicone encapsulant or sealant. This non-corrosive, single component silicone will cure to a solid elastomer in seconds upon exposure to ultraviolet (UV) light. A UV cure only silicone with limited adhesion, MCT 8025's higher viscosity makes it ideal for cured-in-place gaskets.

With a viscosity of ~65,000 cPs, MCT 8025 enhances reliability of delicate components, and provides both stress and shock relief.

Used for:

- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components and harsh environments
- Gasketing, sealing, and potting
- Pin connectors and junctions

	MCT 8025
Appearance & Form	Translucent, semi-flowable
Cure Chemistry	UV only
Viscosity (cPs) Brookfield RV #7 @ 10 rpm	65,000
Shadow Area Cure	No
UV Tracer	No
Service Temp	-40°F to 392°F (-40°C to 200°C)
Compliance	REACH, PFAS free, 50 state VOC

Lab preliminary data

UV Cure Silicone Paste

MCT 8040
MCT 8041 *Product Development Pipeline*

With a typical viscosity of ~300,000 cPs, 8040 and MCT 8041 are UV cure only, fast curing pastes that consistently hold their shape even when dispensed into complex patterns. With its nearly instant UV cure, these materials are widely used for automated dispensing and cured-in-place gaskets (CIPG). Their consistent rheology makes them ideal as damming materials in a dam and fill process.

These non-corrosive, single component silicones offer a room temperature cure in seconds upon exposure to ultraviolet (UV) light. These silicone pastes are 100% solids with no solvents. They can be applied by automated needle dispense, jetting, or hand dispense.

MCT 8040 (non-adhesive)
MCT 8041 (adheres to plastic)

Used for:

- Medical device electronics
- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components in harsh environments
- Gasketing and sealing

MCT 8040 applied as part of a dam and fill process.

	MCT 8040	MCT 8041
Appearance & Form	Translucent, paste	Opaque, paste
Cure Chemistry	UV only	UV only
Viscosity (cPs) Brookfield HB #6 @ 10 rpm	300,000	300,000
Tensile Strength ASTM D412	370 psi	150 psi
Elongation ASTM D412	1,200%	1,000%
Hardness (Shore A) ASTM D2240	20	20
Specific Gravity ASTM D1875	1.11	1.11
Extrusion Rate 1/8" orifice @ 50 psi	>200 g/min	>200 g/min
Volume Resistivity (Ω-cm) ASTM D257	$3.01x10^{13}$	$3.01x10^{13}$
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0011/0.0021	-
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	3.34 / 3.33	-
Dielectric Strength ASTM D149	14.1 kV/mm 355 V/mil	-
Shadow Area Cure	No	No
UV Tracer	No	No
Service Temp	-40°F to 392°F (-40°C to 200°C)	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1 *(pending)*	-
Compliance	REACH, PFAS free, 50 state VOC	PFAS free, 50 state VOC

Lab preliminary data

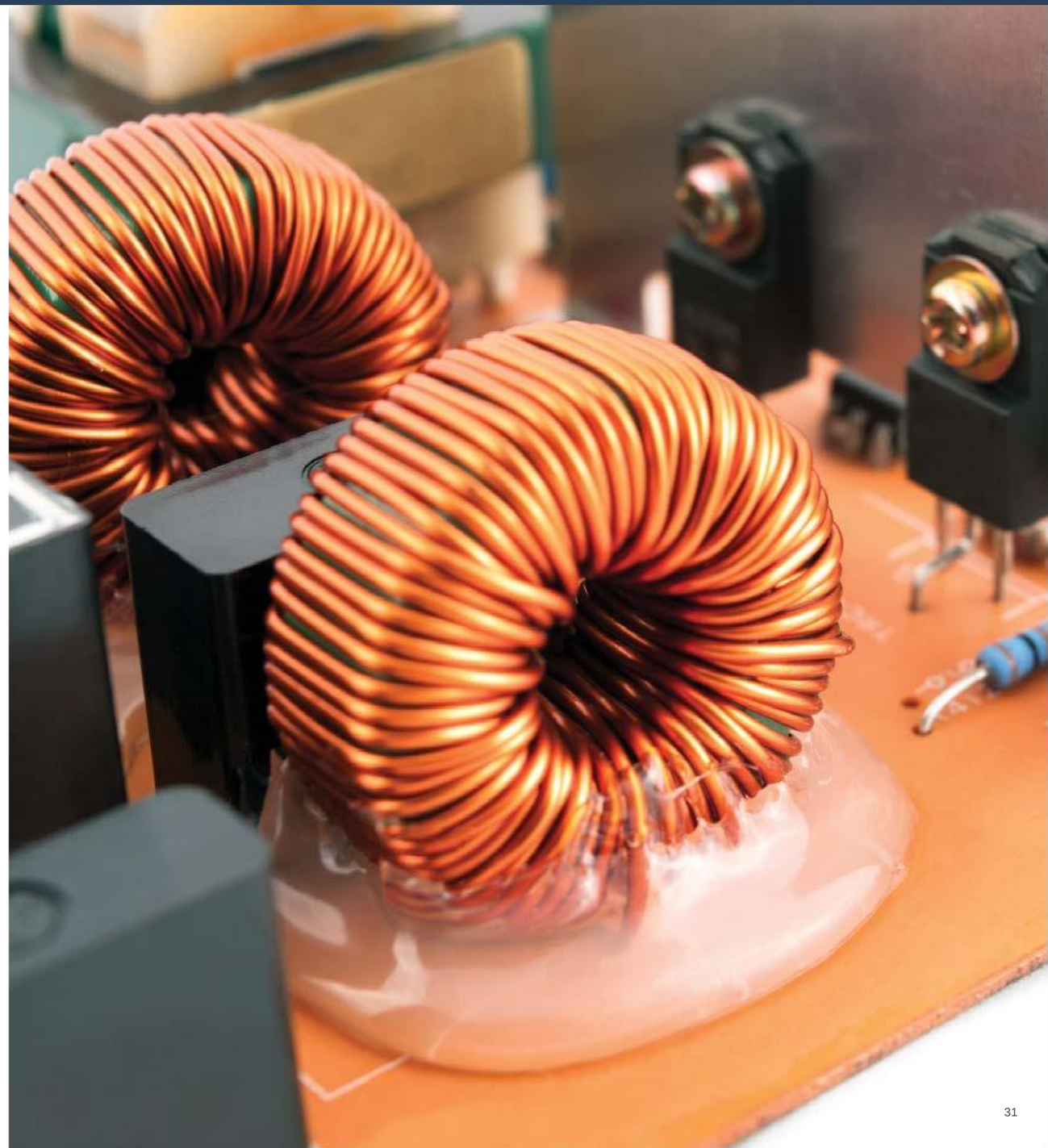
Adhesives, Staking & Glob Top

Essential Attributes	MCT 509x*	MCT 515*	MCT 50PV	MCT 8075
	Adhesive Pastes		Photovoltaic Adhesive	Staking & Glob Tops
	PHYSICAL PROPERTIES			
Appearance	Black, paste	Translucent, paste	Black, paste	Clear, semi-flowable
Cure Chemistry	Alkoxy Moisture Cure	Alkoxy Moisture Cure	2k Alkoxy Moisture Cure (10:1)	UV Alkoxy Dual Cure
Viscosity (cPs)	650,000	-	Part A: 150,000 Part B: 150,000	50,000
Skin Time	8 min	5 - 30 min	-	-
Through Cure	7 days	-	8 hours	-
Tensile Strength	650 psi	200 psi	268 psi	15 psi
Elongation	150%	650%	103%	185%
Hardness (Shore A)	55	18	48	8
Flammability Class (UL94)	V-0 *(pending)*	-	HB *(pending)*	V-1 *(pending)*
Specifications	-	-	UL 746A *(pending)* UL 746B *(pending)* UL 746C *(pending)*	ISO 10993-5 ISO 10993-10 ISO 10993-20 UL 746E *(pending)*
Adhesion	glass, FR4, aluminum	glass, aluminum	glass, aluminum	-
	ELECTRICAL PROPERTIES			
Volume Resistivity	8.40×10^{13} Ω-cm	1.47×10^{9} Ω-cm	7.60×10^{6} Ω-cm	-
Dissipation Factor	0.0035 @100 Hz 0.0033 @100 kHz	0.0033 @100 Hz 0.0031 @100 kHz	0.0100 @100 Hz 0.0020 @100 kHz	-
Dielectric Constant	3.26 @100 kHz	3.55 @100 kHz	3.21 @100 kHz	-
Dielectric Strength	1,000 V/mil	17.6 kV/mm 447 V/mil	>38 kV/mm >975 V/mil	-

*Preliminary data

By shifting to chemical adhesives, design engineers are eliminating the localized stress points associated mechanical fasteners, improving reliability while simultaneously lightening components and reducing cost.

MicroCoat silicone adhesives can be used as a stabilizing material to minimize stresses on individual components. These staking and glob top connections provide an elastic and resilient bond between the component and the board to minimize shock and vibration, increasing both reliability and service life.



UL 94 V-0 Alkoxy Silicone Paste (1-part sealant)

MCT 509x *Product Development Pipeline*

MCT 509x is a neutral cure (alkoxy), UL 94 V-0 rated black paste for applications that require superior bond strength and flame resistance. This one-part paste has a good balance of tensile strength and elongation and cures to a tough, resilient elastomer with no unreacted components remaining after cure.

When a non-corrosive product is required, MCT 509x is an unprimed adhesive solution that delivers a more uniform bond, acts like a gasket to protect against moisture and dust, and helps dampen vibrations. This paste is safe for electronics applications.

MCT 509x skins over in less than 10 minutes, and is completely cured within 7 days. Specially formulated to retain its physical properties even during service in extreme environmental conditions, it is ideal for applications that require superior bond strength and a UL 94 V-0 rating.

Used for:

- Frame and junction box sealant in photovoltaic modules, sensitive electronic components, and circuit boards
- General industrial sealing and bonding applications requiring a non-corrosive product

	MCT 509x
Appearance & Form	Black. paste
Cure Chemistry	Alkoxv Moisture Cure
Viscosity (cPs) Brookfield HB #6 @ 20 rpm	650,000
Skin-Time 3/8" @ 50% RH & 77°F	8 min
Through Cure 3/8" @ 50% RH & 77°F	7 days
Tensile Strength ASTM D412	650 psi
Elongation ASTM D412	150%
Hardness (Shore A) ASTM D2240	55
Adhesion ASTM C794 Glass FR4 Aluminum	15 - 20 pli >6 pli 15 - 20 pli
Specific Gravity ASTM D1875	1.46
1/8" orifice @ 50 psi	50 g/min
Thermal Conductivity ASTM D5470	0.60 w/m. K
Thermal Expansion (CTE) (ppm/°C) ASTM E831	255
Volume Resistivity (Ω-cm) ASTM D257	8.40x10 13
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0035 / 0.0033
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	3.24 / 3.26
Dielectric Strength ASTM D149	40 kV/mm 1,000 V/mil
Chemical Resistance Gasoline Brake Fluid Antifreeze Wheel Cleaner	Yes Yes Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-0 *(pending)*
Compliance	REACH, PFAS free, 50 state VOC

Lab preliminary data

Translucent Alkoxy Paste Adhesive

MCT 515 *Product Development Pipeline*

MCT 515 is a single component, alkoxy cure, silicone adhesive that is used for assembling printed wire boards and sealing modules, housings, and electrical leads. It is a non-flowing/ non-slumping formulation that cures at room temperature, and has a good balance of tensile strength and elongation.

When a non-corrosive product is required, MCT 515 is an unprimed adhesive solution that delivers a uniform bond and acts like a gasket to protect against moisture and dust, while helping to dampen vibrations. MCT 515 cures to a tough, resilient elastomer.

Used for:

- Sealing openings in modules and housings
- Adding mechanical stability to individual components
- Assembly of components on PCBs
- Sealing in and around wires and electrical leads

	MCT 515
Appearance & Form	Translucent, paste
Cure Chemistry	Alkoxv Moisture Cure
Skin-Time 1/8" @ 50% RH & 77°F	5 - 30 min
Tensile Strength ASTM D412	200 psi
Elongation ASTM D412	650%
Hardness (Shore A) ASTM D2240	18
Adhesion ASTM C794 Glass Aluminum	12 - 15 pli 12 - 15 pli
Specific Gravity ASTM D1875	1.02
Volume Resistivity (Ω-cm) ASTM D257	1.47x10 12
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0033 / 0.0031
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	3.57 / 3.55
Dielectric Strength ASTM D149	17.6 kV/mm 447 V/mil
Service Temp	-40°F to 392°F (-40°C to 200°C)
Compliance	REACH, PFAS free, 50 state VOC

Target data

Photovoltaic PV Assembly Sealant (2-part, 10:1)

MCT 50PV

MCT 50PV is a two-component, alkoxy condensation cure silicone thixotropic paste. MCT 50PV has a moderate curing speed at room temperature, allowing sufficient time for large components and complex assemblies to come together during panel manufacturing, while providing significantly greater throughput than single-component condensation cure products. MCT 50PV offers very good adhesion to many different materials, including glass, aluminum, and composites.

It has excellent long-term durability and adhesion performance. This paste is designed for use in a variety of applications where long-term temperature cycle resistance, UV exposure, and other harsh exposure conditions exist. MCT 50PV offers outstanding weather and aging resistance, is low odor, and non-corrosive. With a 10:1 variable mix ratio, this material is designed to be used with automated dispensing equipment and the cure time is adjustable based on manufacturing requirements.

Used for:

- PV solar panel assembly
- PV junction box assembly and attachment
- PV solar frame assembly
- Interior and exterior bonding
- Interior and exterior sealing
- Encapsulation
- Electrical connector sealing

	MCT 50PV
Appearance & Form	Black. paste
Cure Chemistry	2k Alkoxv Moisture Cure (10:1 variable)
Viscosity (cPs) Brookfield HB #6 @ 20 rpm	Part A: 150.000 Part B: 150,000
Through Cure	8 hrs
Tensile Strength ASTM D412	268 psi
Elongation ASTM D412	103%
Hardness (Shore A) ASTM D2240	48
Adhesion ASTM D897 Glass Aluminum Steel	180 psi 180 psi >130 psi
Specific Gravity ASTM D1875	Part A: 1.40 Part B: 1.03
Extrusion Rate 1/8" orifice @ 50 psi 1/8" orifice @ 90 psi 1/8" orifice @ 30 psi	Part A: 120 g/min Part A: 250 g/min Part B : 800 g/min
Volume Resistivity (Ω-cm) ASTM D257	7.60x10^{16}
Dissipation Factor (100 Hz / 100 kHz) ASTM D150	0.0100 / 0.0020
Dielectric Constant (100 Hz / 100 kHz) ASTM D150	3.30 / 3.21
Dielectric Strength	>38 kV/mm >975 V/mil
Tack Free Time ASTM D2377	60 min
Flammability Class (UL 94)	HB *(pending)*
Listings / Specifications	UL 746A *(pending)* UL 746B *(pending)*
Compliance	REACH, PFAS free, 50 state VOC

UV Alkoxy Dual Cure Semi-Flowable Staking Silicone

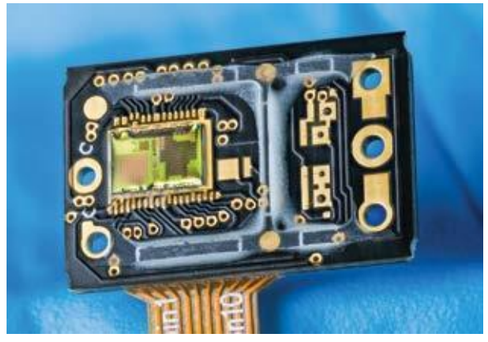
MCT 8075

With viscosity of 50,000 cPs, MCT 8075 is a translucent silicone that clings readily to components for formed-in-place gasketing, staking, and glob-top applications. This non-corrosive, single component silicone will cure to a soft elastomer in seconds upon exposure to ultraviolet (UV) light, making it ideal for stress and strain relief as well as protection of delicate circuits. It has a secondary, neutral alkoxy moisture cure for enhanced adhesion and shadow cure.

MCT 8075 contains a standard UV tracer for quality control.

Used for:

- Formed-in-place-gasketing
- Medical device electronics
- Sensor coating
- Printed circuit/wiring boards
- Flexible hybrid electronics
- Rigid electronics
- Sensitive components and harsh environments
- Gasketing, sealing, and potting



	MCT 8075
Appearance & Form	Clear. semi-flowable
Cure Chemistry	UV Alkoxv Dual Cure
Viscosity (cPs) Brookfield RV #5 @ 20 rpm	50,000
Tensile Strength ASTM D412	15 psi
Elongation ASTM D412	185%
Hardness (Shore A) ASTM D2240	8
Specific Gravity ASTM D1875	0.98
Shadow Area Cure	Ye s
UV Tracer	Ye s
Service Temp	-40°F to 392°F (-40°C to 200°C)
Flammability Class (UL 94)	V-1 *(pending)*
Listings / Specifications	ISO 10993-5 ISO 10993-10 ISO 10993-23 UL 746E *(pending)*
Compliance	REACH, PFAS free, 50 state VOC

Best-in-Class R&D

Formulated to succeed

Our scientists work best when armed with raw materials that meet our high standards and equipment that allows them to identify, analyze, quantify, and qualify. With 100+ variations of tests available that measure every aspect of a material, we will go to any length to assure that each innovative product we produce performs to your exacting specifications.

Aged to perfection

Even in a lab stocked with the newest, most advanced, intricate testing equipment, that trusty old oven is still a time tested favorite. We use it to subject our silicones to the harshest of environments in the shortest amount of time. We simulate the aging process to evaluate and assure the shelf life and long term performance of the materials you trust to protect your product.

Listen, learn, *then* innovate

All the best lab equipment being used by the smartest silicone engineers in the world won't make a difference unless there is absolute clarity as to what the silicone material needs to do, where it needs to do it, and why. And that's why any project must start with a meeting of the minds—yours and ours.

World Class Products

In addition to the products offered in this catalog, MicroCoat manufactures silicone sealants, coatings, and PVC foams for a wide variety of markets.

Electronics Grade Silicones

When a non-corrosive product is required, we offer unprimed adhesive solutions that provide excellent insulation properties, vibration damping, and barrier protection against weather and other intrusions in electronics applications. MicroCoats electronics grade alkoxy sealants combine increased flexibility and high temperature resistance, allowing you more versatility in the design and assembly process. Our silicones reliably seal, bond, coat, gasket, and encapsulate to protect sensitive components and modules, increase the reliability and extend the useful life of your product.

Clean and Green

Low odor, solvent free, no harmful VOC emissions or outgassing,

Our **innovative** labs produce an **extensive** line of quality products.