



IQ-BOND

IQ-CAST

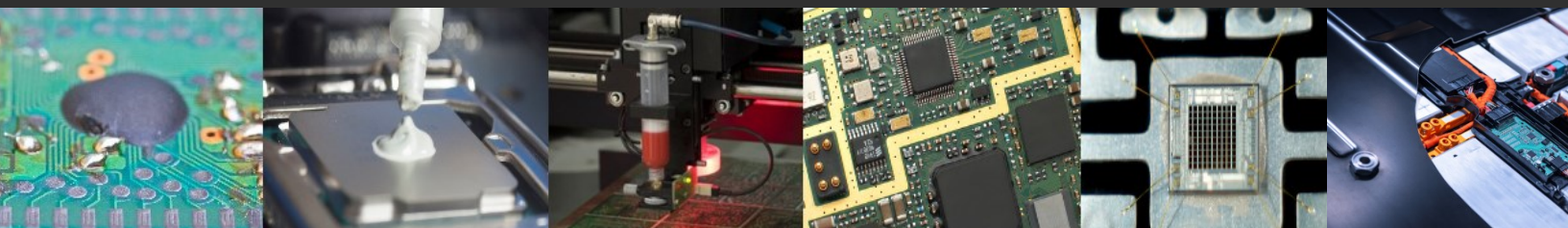
IQ-SINTER

IQ-INQ

Adhesives, Coatings, Inks & Resins for Electronic & Industrial Applications

Our product portfolio includes:

- Electrically conductive adhesives
- Insulating adhesives
- Thermally conductive adhesives and potting materials
- High temperature resistant adhesives
- Die Attach and Flip Chip bonding
- Underfill adhesives for BGA, CSP & Wafer-level
- Glob Top and Dam & Fill resins
- Liquid resins for encapsulation and potting
- Flame retardant materials, UL94-V0 certified
- Optically clear adhesives, coatings and encapsulants
- Functional Inks
- Fast UV-curable adhesives
- Structural Bonding
- Sintering materials



Adhesives, Coatings, Inks & Resins for Electronic & Industrial Applications

“Custom development, also for small
volumes“

“Application and knowledge support“

“Global presence and partner network”

“Game changer in speed of response,
LT, MOQ”

“Custom formulations are our business”

IQ-BOND® adhesives and IQ-CAST® potting resins have been used for many years in high reliability applications and markets such as aviation, medical, aerospace, defense, energy, automotive and industrial electronics.



With state of the art laboratories and manufacturing facilities in the center of Europe, optimized and focused towards small to medium sized volume applications, ROARTIS® is well positioned to meet the stringent requirements of the current and future electronic market requirements.

All the materials developed and commercialized by ROARTIS® are compliant to the latest environmental regulations, such as RoHS, REACH, WEEE and the End-Of-Life-Vehicle directive.



Your benefits

- Working with an **Innovative** and **Quality** focused supplier of adhesives and resins for electronic and industrial b2b markets and applications
- Flexible through short lead times
- Quick market response
- Custom formulations, even for small volume applications
- Technical support
- State of the art material testing & characterisation equipment
- Wide range of packaging types:
 - Small: 1cc, 3cc, 5cc, 10cc, 30cc, 350cc, 50g, 100g...



- Large: from cans to gallons to drums

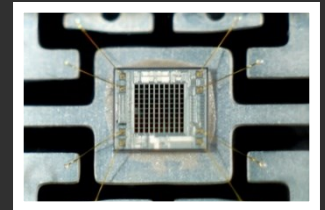


- Different chemistries to offer solutions for:
 - CTE Mismatch, fast cure
 - Low thermal resistivity, thin bondline
 - High Tg, low CTE, small gap flow
 - High reliability, low temperature cure
 - Harsh environments, extreme thermal cycling requirements
 - Optically clear, non-yellowing products
 - High temperature resistance, low VOC's
 - UL-V0, low shrinkage
 - High throughput, fast cure for print, dispense and/or jet

Electrically conductive adhesives

ROARTIS® offers both isotropically conductive adhesives (conducting in 3 dimensions), as well as anisotropically conductive adhesives (conducting only in the z-direction).

Within our family of electrically conductive adhesives, we provide materials optimized for dispensing, stencil or screen printing, as well as stamping and jetting processes. Typical applications include bonding micro-electronic components onto temperature sensitive substrates, such as flexible circuits, or replacing solder pastes in applications where increased flexibility is required, especially for severe thermal-cycling requirements.

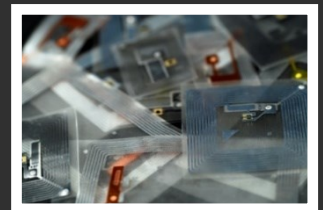


ISOTROPIC

1-Komponent	Cure	Viscosity (mPa.s)	Resistivity (Ohm.cm)	Worklife	Remarks
IQ-BOND 5401-CE	5 min @ 150°C 15 min @ 120°C	150.000	1×10^{-3}	48 hrs	Dispensing
IQ-BOND 5402-CE	5 min @ 150°C 15 min @ 120°C	78.000	5×10^{-4}	24 hrs	Dispensing/Jetting
IQ-BOND 5405-CE	3 min @ 150°C 15 min @ 120°C	300.000	5×10^{-4}	72 hrs	Stencil & Screen Printing
IQ-BOND 5408-CE	5 min @ 150°C 15 min @ 120°C	150.000	5×10^{-3}	24 hrs	Dispensing/Stamping
IQ-BOND 5132-CE	15 min @ 175°C 90 min @ 120°C	160.000	5×10^{-4}	12 hrs	Flexibilized, for CTE mismatch, high temperature resistance up to 200°C

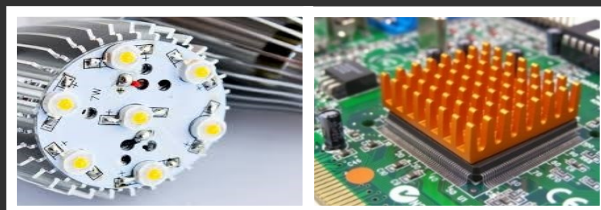
2-Komponent	Cure	Liquid/ paste	Resistivity (Ohm.cm)	Worklife	Remarks
IQ-BOND 5600-CE	1 min @ 150°C 10 min @ 120°C 3 hrs @ 50°C 24hrs @ 25°C	Paste	$< 5 \times 10^{-4}$	45 min	Standard version, low outgassing, very high adhesion strength, ESA-usage
IQ-BOND 5600-CE-SMP	1 min @ 150°C 10 min @ 120°C 3 hrs @ 50°C 24hrs @ 25°C	Paste	$< 5 \times 10^{-4}$	45 min	Finer particle version of the IQ-BOND 5600-CE, additional manufacturing steps guarantee smaller particles
IQ-BOND 5601-CE	1 min @ 150°C 10 min @ 120°C 3 hrs @ 50°C 48hrs @ 25°C	Paste	$< 5 \times 10^{-4}$	4 hrs	Easy 1:1 Mix-ratio
IQ-BOND 5611-CE	5 min @ 150°C 30 min @ 120°C 2 hrs @ 80°C 48 hrs @ 25°C	Paste	$< 5 \times 10^{-4}$	4 hrs	2:1 Mix-ratio, low temperature cure

ANISOTROPIC



1-Komponent	Cure	Viscosity (mPa.s)	Worklife	Remarks
IQ-BOND 5970-ACE	15-30 sec @ 170°C 3 min @ 150°C	6.000	12 hrs	Very fast cure , high ionic purity
IQ-BOND 5971-ACE	45 sec @ 190°C 2 min @ 170°C	5.200	48 hrs	Long potlife with reasonable fast cure
IQ-BOND 5972-ACE	45 sec @ 170°C 3 min @ 150°C	13.000	5 days	Very long potlife
IQ-BOND 5973-ACE	10 sec @ 170°C 3 min @ 150°C	3.500	5 days	Snap cure, long work life
IQ-BOND 5976-ACE	10 sec @ 170°C 3 min @ 150°C	35.000	5 days	Snap cure, long work life, low cost alternative for high volume applications

Thermally conductive adhesives



Electronic devices which get smaller, lighter, and always better in performance. This trend towards electronics miniaturization has been and always will be one of the driving forces for improved thermal dissipation materials. ROARTIS® has developed a range of 1-komponent, as well as 2-komponent thermally conductive materials, which help in dissipating the heat. All of the electrically conductive materials, based on Ag-metal fillers, have thermal conductivities > 5 W/m.K.

The list of products below are insulating materials, combined with very small thermally conductive fillers, ideal for those applications where the heat must be dissipated away from temperature sensitive components, by means of very thin bond lines.

1-Komponent	Cure	Viscosity (mPa.s)	Thermal Conductivity (W/m.K)	Worklife	Remarks
IQ-BOND 2231-T	1-2 min @ 150°C 30 min @ 80°C	2.000	1,0	5 days	Standard
IQ-BOND 2232-T	1-2 min @ 150°C 30 min @ 80°C	30.000	0,9	5 days	Non-Abrasive filler
IQ-BOND 2235-T	1-2 min @ 150°C 30 min @ 80°C	175.000	1,1	5 days	Non-Abrasive filler, non-sagging
IQ-BOND 2236-T	1-2 min @ 150°C 30 min @ 80°C	13.000	0,7	5 days	Non-Abrasive filler
IQ-BOND 2238-T	1-2 min @ 150°C 30 min @ 80°C	18.500	0,8	5 days	Non-Abrasive filler
IQ-BOND 2800-T	60 min @ 180°C 90 min @ 130°C	85.000	1,0	> 5 days	Low Outgassing, ESA-approved
IQ-BOND 2801-T	60 min @ 180°C 90 min @ 130°C	270.000	1,2	> 5 days	Higher viscosity / thixotropy version
IQ-BOND 2432-T	15 min @ 175°C 90 min @ 120°C	50.000	0,9	12 hrs	Flexibilized, CTE mismatch
IQ-BOND 1501-T	1 min @ 180°C 60 min @ 80°C	40.000	0,8	5 days	Standard, economical

2-Komponent	Cure	Viscosity (mPa.s)	Thermal Conductivity (W/m.K)	Worklife	Remarks
IQ-BOND 1625-T	5 min @ 120°C 24hrs @ 25°C	9.000	1,1	2 hrs	1:1 Mix-ratio
IQ-BOND 1632-T	15 min @ 175°C 90 min @ 120°C	175.000	1,1	12 hrs	1:1 Mix-ratio
IQ-BOND 2609-T	1 min @ 80°C 15 min @ 25°C	200.000	0,9	5 min	Fast Cure ; 4:1 Mix-ratio 85°C service T°
IQ-BOND 2611-T-FC	5 min @ 120°C 15 min @ 25°C	20.000	1,3	5 min	Fast Cure; 1:1 Mix ratio
IQ-BOND 2612-T-FC	2 min @ 60°C 6 min @ 25°C	20.000	1,3	4 min	“thermocouple glue”, faster version of IQ-BOND 2611-T-FC; 1:1 Mix ratio
IQ-BOND 2619-T-FC	5 min @ 60°C 20 min @ 25°C	65.000	1,0	5 min	Fast Cure, thermally & structural; 1:1 Mix ratio
IQ-BOND 2655-T-FL	2 min @ 60°C 6 min @ 25°C	350.000	2,3	3 hrs	Flexibilized, thermally & structural; 1:1 Mix ratio

Thermal greases



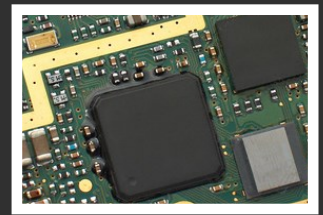
Thermal grease is a thermally conductive paste which is commonly used as a thermal interface material between heat sources such as high-power semiconductor devices, and heatsinks. The main purpose of a thermal grease is to eliminate air gaps or spaces (which act as thermal insulator) from the interface area in order to maximize heat transfer and as such, improve the cooling of the heat-generating device.

In contrast to thermally conductive adhesives, thermal grease does not add mechanical strength to the bond between heat source and heat sink. It will have to be assembled with a mechanical fixation mechanism such as screws, applying pressure between the two, spreading the thermal grease onto the heat source.

Unlike the traditional suppliers which typically provide thermal greases based on silicon-chemistry, ROARTIS® has chosen to develop non-silicone based thermal wax, eliminating the risk of silicone-poisoning, for example in semiconductor or automotive assemblies. For certain applications we however do still offer silicon-based materials.

	Viscosity (mPa.s)	Thermal conductivity (W/m.K)	Remarks
IQ-GREASE 9302	500.000	3,1	Silicone-free Highest performance Low Outgassing
IQ-GREASE 9303	5.000.000	2,8	Silicone-free Economical version of 9302
IQ-GREASE 9312	45.000	4,1	Silicone-based Solvent-free Very low Outgassing
IQ-GREASE 9313	50.000	1,4	Silicone-based Solvent-free Economical version of 9312
IQ-GREASE 9314	3.000.000	6,1	Silicone-based Solvent-free Low Outgassing

Underfill encapsulants

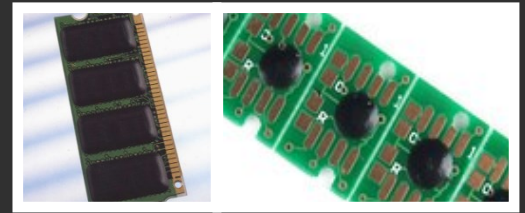


Underfills are typically epoxy-based materials which are used in electronic assemblies to fill the gap between BGA-, CSP- or Flip Chip-components and the printed circuit board. As such, these components are protected against shock, drop, thermal-cycling and vibration impact. ROARTIS® offers a range of capillary underfills with unique features such as high Tg, low CTE and good flow, even for very small gap applications.

Underfill	Cure	Viscosity (mPa.s)	CTE (ppm)	Tg (°C)	Worklife
IQ-BOND 2476	15 min @ 160°C 120 min @ 120°C	12.500	26	125	24 hrs
IQ-BOND 2477	15 min @ 160°C 120 min @ 120°C	5.000	30	130	48 hrs
IQ-BOND 2409	15 min @ 160°C 120 min @ 120°C	8.000	60	110	5 days
IQ-BOND 2409-LV	30 sec @ 175°C 5 min @ 120°C	4.000	60	110	> 1 week
IQ-BOND 2471	5 min @ 150°C 60 min @ 100°C	5.000	35	105	3 - 5 days
IQ-BOND 2472	3 min @ 150°C 20 min @ 120°C	3.000	30	130	5 days
IQ-BOND 2472-LV	3 min @ 150°C 20 min @ 120°C	1.700	35	105	5 days
IQ-BOND 2473	3 min @ 150°C 60 min @ 100°C	550	40	105	5 days
IQ-BOND 2483	3 hrs @ 150°C 2hrs @ 90°C + 3hrs @ 150°C	21.000	15	230	24 hrs
IQ-BOND 2473-LV	3 min @ 150°C 60 min @ 100°C	375	60	105	5 days
IQ-BOND 2481	3 hrs @ 150°C 2hrs @ 90°C + 3hrs @ 150°C	30.000	18	230	12 hrs
IQ-BOND 2490	3 min @ 150°C 60 min @ 100°C	20.000	19	160	5 days
IQ-BOND 2420	3 hrs @ 150°C 2hrs @ 90°C + 3hrs @ 150°C	65.000	14	230	24 hrs

Special Applications	Cure	Viscosity (mPa.s)	Application
IQ-BOND 2175	30 min @ 120°C 120 min @ 80°C	200	“Zero-Gap” underfill f.e. large IC’s with 5µm-spacing
IQ-BOND 2176	2hrs @ 90°C + 3 hrs @ 150°C + 6 hrs @ 230°C	2.200	High temperature resistance epoxy Tg = 250°C
IQ-BOND 2177	2hrs @ 90°C + 3 hrs @ 150°C	2.200	Thermally conductive underfill, High Tg
IQ-BOND 2493-T	3 min @ 150°C 60 min @ 100°C	2.000	High Thermally conductive underfill
IQ-BOND 2495-T	3 min @ 150°C 60 min @ 100°C	2.600	Economical thermally conductive underfill
IQ-BOND 2178	3hrs @ 150°C + 2hrs @ 90°C + 3hrs @ 150°C	14.000	Resists temperatures over 200°C

“Glob Top” – “Dam & Fill” encapsulants



In many electronic assemblies, sensitive components such as bare Si dies, crystal oscillators, RF components, BGA's and CSP's require a reliable protection against harsh environments.

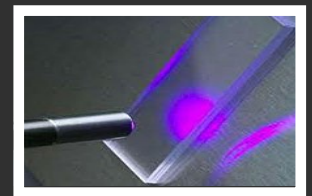
ROARTIS® epoxy-based “Glob Top” and “Dam & Fill” resins with high Tg and low CTE are used in demanding applications where customers require thermal cycling resistance between -55°C up to 180°C. Also extensive humidity storage testing (2000hrs. 85°C / 85%RH) has proven to be no obstacle for ROARTIS® “Glob Top” or “Dam & Dill” materials.

Where “Dam & Fill” encapsulants are typically used for larger die applications, “Glob Top” encapsulants are mostly used for smaller chips. To minimize the process time, the chemistry of the “Dam & Fill” encapsulants has been optimized to enable a co-cure process.

Dam & Fill	Cure	Viscosity (mPa.s)	Tg (°C)	CTE (ppm)	Hardness	Worklife
IQ-BOND 2504	2 hrs @ 150°C 1 hr @ 165°C	14.000	150	18	85 D	24 hrs
IQ-BOND 2505	2 hrs @ 150°C 1 hr @ 165°C	7.500	150	18	85 D	24 hrs
IQ-BOND 2513	2 hrs @ 150°C 1 hr @ 165°C	5.000	165	30	85 D	24 hrs
IQ-BOND 2514	2 hrs @ 150°C 1 hr @ 165°C	4.500	165	25	85 D	24 hrs
IQ-BOND 2515	2 hrs @ 150°C 1 hr @ 165°C	14.500	165	22	85 D	24 hrs
IQ-BOND 2580	2 hrs @ 150°C 1 hr @ 165°C	85.000	250	19	85 D	24 hrs

Glob Top	Cure	Viscosity (mPa.s)	Tg (°C)	CTE (ppm)	Hardness	Worklife
IQ-BOND 2512	2 hrs @ 150°C 1 hr @ 165°C	4.000	165	20	85 D	24 hrs
IQ-BOND 2280	1 min @ 150°C 5 min @ 120°C 60 min @ 80°C	13.000	100	35	80 D	60 min
IQ-BOND 2520	2 hrs @ 90°C + 3 hrs @ 150°C	100.000	250	19	85 D	24 hrs
IQ-BOND 2538	15 min @ 175°C 60 min @ 150°C	175.000	N.A	~ 100	30 D 90 A	24 hrs
IQ-BOND 2478	10 min @ 150°C 30 min @ 120°C	1.600	N.A	30	85 D	48 hrs

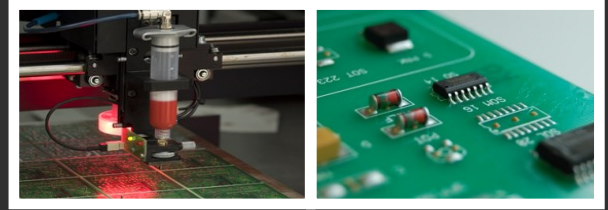
UV-curable	Cure	Viscosity	T.I.	Hardness	Application
IQ-BOND 7291-UV	30 seconds at 120 mW/cm ² for a 500 µm thick layer (UV-A)	1.000	1,1	80 D	Fill
IQ-BOND 7292-UV	30 seconds at 120 mW/cm ² for a 500 µm thick layer (UV-A)	10.000	3,0	70 D	Glob Top
IQ-BOND 7294-UV	30 seconds at 120 mW/cm ² for a 500 µm thick layer (UV-A)	300.000	7,0	70 D	Dam
IQ-BOND 7296-UV	30 seconds at 120 mW/cm ² for a 500 µm thick layer (UV-A)	140.000	> 7,0	70 D	Dam
IQ-BOND 7297-UV	30 seconds at 120 mW/cm ² for a 500 µm thick layer (UV-A)	200.000	7,0	70 D	Dam
IQ-BOND 8429-UV	30 seconds at 120 mW/cm ² for a 500 µm thick layer (UV-A)	28.000	2,5	70 D	Glob Top



Optically clear UV-curable adhesives

ROARTIS® supplies a range of UV-curable adhesives, with unique non-yellowing properties for optical applications, such as glass-bonding, optical sensors, OLED lighting, etc.

UV-curable	Chemistry	Viscosity (mPa.s)	Color	Storage	Remarks
IQ-BOND 7195-UV	UV-Epoxy	170	Clear	12 months	Optical and/or laser disc application
IQ-BOND 7196-UV	UV-Epoxy	2.300	Clear	12 months	Flexible clear coating
IQ-BOND 8419-UV	UV-Acrylate	20,000	Crystal Clear	12 months	Flexible, Optical application, High adhesion strength
IQ-BOND 8421-UV	UV-Acrylate	1,250	Clear	12 months	Optical application , excellent non-yellowing resistance
IQ-BOND 8422-UV	UV-Acrylate Hybrid	2,000	Crystal Clear	12 months	Glass bonding, also for OLED application , excellent non-yellowing resistance
IQ-BOND 8424-UV	UV-Acrylate	7.000	Clear	12 months	Non-tacky
IQ-BOND 8425-UV	UV-Acrylate	600	Clear	12 months	Low viscosity version of IQ-BOND 8424-UV
IQ-BOND 8426-UV	UV-Acrylate	7,000	Clear	12 months	Dual-cure solution for "shadow" zones Modification of 8424 by adding thermal cure additive
IQ-BOND 8462-UV	UV-Acrylate	1,000	Clear	12 months	Flexible, Optical application, High adhesion strength



Surface mount adhesives (SMA)

ROARTIS® has a long history in supplying state of the art surface mount adhesives, for dispensing as well as printing processes.

All of the IQ-BOND® SMD-adhesives are compatible with Pb-free wave soldering processes, and provide high green strength to assure high yields during the pick & place process of all common SMD components.

	Cure	Viscosity (mPa.s)	Hardness	Worklife	Application method(s)
IQ-BOND 2200 (Yellow)	1-2 min @ 150°C 5 min @ 120°C 30 min @ 80°C	150.000	85 D	5 days	Printing Dispensing/Jetting Stamping
IQ-BOND 2400 (Yellow)	1-2 min @ 150°C 5 min @ 120°C	150.000	85 D	10 days	Printing Dispensing
IQ-BOND 2401 (Yellow)	1-2 min @ 150°C 5 min @ 120°C	80.000	85-D	5 days	Jetting High-Speed dispensing
IQ-BOND 3200 (Red)	1-2 min @ 150°C 5 min @ 120°C 30 min @ 80°C	150.000	85 D	5 days	Printing Dispensing / Jetting Stamping
IQ-BOND 3202 (Red)	1 min @ 150°C 5 min @ 105°C	600.000	85 D	5 days	Printing
IQ-BOND 3204 (Red)	1-2 min @ 150°C 5 min @ 120°C 30 min @ 80°C	250.000	85 D	10 days	High-Speed dispensing / Jetting
IQ-BOND 3400 (Red)	1-2 min @ 150°C 5 min @ 120°C	150.000	85 D	10 days	Printing Dispensing
IQ-BOND 3401 (Red)	1-2 min @ 150°C 5 min @ 120°C	80.000	85 D	5 days	Jetting High-Speed dispensing
IQ-BOND 3707 (Red)	10 sec @ 170°C 2 min @ 150 °C 5 min @ 120°C	250.000	85 D	5 days	High-Speed Ultra-Fine Dot Dispensing Fast-cure
IQ-BOND 3708 (Red)	10 sec @ 170°C 2 min @ 150 °C 5 min @ 120°C	1.500.000 @ 10 rpm – 60°C	> 85 D	10 days	High-Speed Ultra-Fine Dot Dispensing Fast-cure 1:1 Aspect Ratio
IQ-BOND 3709 (Red)	10 sec @ 170°C 2 min @ 150 °C 5 min @ 120°C	4.000.000 @ 1 rpm – 25°C 350.000 @ 10 rpm – 60°C	> 85 D	10 days	High-Speed Ultra-Fine Dot Dispensing Fast-cure

Structural adhesives



ROARTIS® offers a range of materials which are used for bonding a variety of substrates, such as glass, plastics, metals, ceramics, etc.

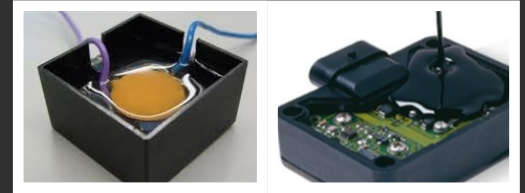
Where many of our adhesives are specifically designed for well-defined applications, such as chip bonding, chip protection, electrical or thermal conductivity, our group of “structural adhesives” is a more general group of epoxy or epoxy-hybrid adhesives with high adhesion strength.

This group of adhesives covers a wide range of applications ... as easy as bonding a PCB into a plastic housing for room temperature applications, up to bonding a camera-module on a carrier for cryogenic (aerospace) applications.

1-komponent	Cure	Viscosity (mPa.s)	Color	Worklife	Remarks
IQ-BOND 2132	15 min @175°C 90 min @ 120°C	40.000	Yellow-Orange	12 hrs	Flexible, for CTE mismatch applications. High temperature applications (200°C)
IQ-BOND 2401	30 sec @ 175°C 5 min @ 120°C	80.000	Yellow	5 days	High speed dispensing and/or jetting
IQ-BOND 2408	30 sec @ 175°C 5 min @ 120°C	13.000	Yellow-Orange	10 days	Flowable structural adhesive, also for thin coatings
IQ-BOND 2409	30 sec @ 175°C 5 min @ 120°C	8.000	Black	5 days	Black, lower viscosity version of IQ-BOND 2408
IQ-BOND 2409-LV	30 sec @ 175°C 5 min @ 120°C	4.000	Black	5 days	Black, lower viscosity version of IQ-BOND 2409
IQ-BOND 2538	15 min @ 175°C 90 min @ 120°C	175.000	Black	24 hrs	Flexible, sealing of CTE mismatched materials

2-komponent	Cure	Viscosity (mPa.s)	Color	Worklife	Remarks
IQ-BOND 2614-FCBT	5 min @ 60°C 20 min @ 25°C	150.000	Black	5 min	1:1 mix ratio
IQ-BOND 2619-TFC	5 min @ 60°C 20 min @ 25°C	65.000	Black	5 min	1:1 mix ratio
IQ-BOND 2640-FC	1 min @ 50°C 10 min @ 25°C	15.000	Clear	4 min	1:1 mix ratio
IQ-BOND 2640-FC-BLACK	1 min @ 50°C 10 min @ 25°C	15.000	Black	4 min	1:1 mix ratio
IQ-BOND 2640-WH-MFC	10 min @ 50°C 60 min @ 25°C	30.000	White	20 min	1:1 mix ratio
IQ-BOND 2658-FL	3 hrs @ 80°C 24 hrs @ 25°C	50.000	Black	1 hr	1:1 mix ratio ,flexible, 50 shore D
IQ-BOND 2681-FLB	1 hr @ 100°C 24 hrs @ 25°C	165.000	Black	1 hr	Black version of IQ-BOND 2680-FL
IQ-BOND 9645-FL	15 min @ 120°C 48 hrs @ 25°C	250.000	Beige	> 2 hrs	4:1 mix ratio

Potting resins – Encapsulants – Casting resins



Electrical and electronic potting resins are designed to insulate and protect electrical and electronic components from application and environmental stresses.

ROARTIS® offers a selection of price competitive epoxy and silicone potting compounds to meet the most demanding application specifications.

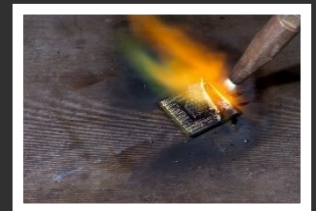
Our portfolio includes flame retardant UL-V0 specified materials, as well as very low viscosity resins for applications which require extreme good flow. Our R&D chemists can formulate the epoxy and silicone based resins to meet your specific application requirements.

Our capabilities include excellent dielectric properties, electrical insulation resistance, thermal conductivity, thermal shock resistance, mechanical strength, hardness and chemical resistance.

Epoxy based	Cure	Viscosity (mPa.s)	Color	Work-life	Remarks
IQ-CAST 9024-T (1/1)	24 hrs @ 25°C 1 hr @ 80°C 5min @ 120°C	7.000	Black	2 hours	Low Shrinkage Thermal Conductivity 1,1 W/m.K
IQ-CAST 9044-T (1/1)	24 hrs @ 25°C 2 hrs @ 80°C 10 min @ 120°C	50.000	Black	2 hours	Low Shrinkage Thermal Conductivity 1,8 W/m.K
IQ-CAST 9100	24 hrs @ 25°C 30 min @ 100°C	4.500	Transparant	45 min	Very good water resistant, toughness and adhesion, meets FDA regulations
IQ-CAST 9120 (100/58)	48 hrs @ 25°C 6 hrs @ 60°C 2 min @ 80°C	200	Transparent	2 hours	Lowest viscosity in the market Cryogenic applications
IQ-CAST 9200 (100/17)	24 hrs @ 25°C 2 hrs @ 80°C	1.800	Transparent or Black	2 hours	Low Shrinkage
IQ-CAST 9400 (100/18)	24 hrs @ 25°C 2 hrs @ 80°C	2.800	Transparent or Black	2 hours	Low Shrinkage
IQ-CAST 9460-FR (100/50)	24 hrs @ 25°C 2 hrs @ 80°C	3.500	Milky or Black	2 hours	Low Shrinkage, Flame Retardant, Meets UL-V0-requirements
IQ-CAST 9640-MOD	48 hrs @ 25°C 30 min @ 120°C	3.400	Light Beige	4 hours	Biomedical applications, qualifyable to BS6920 for drinking water applications
IQ-CAST 9647-FL	48 hrs @ 25°C 6 hrs @ 60°C	4.000	Black	1 hr	Flexible, room-temperature curable, variation in mix-ratio obtains variation in flexibility and hardness
IQ-CAST 9850-T	24 hrs @ 25°C 60 min @ 65°C	85.000	Black	45-60 min	Thermal shock resistant, Low CTE, Room temperature curable, Electrically Insulating, Thermally conductive. Space approved

Silicone based	Cure	Viscosity (mPa.s)	Color	Work-life	Remarks
IQ-CAST 4900-AB (1/1)	48 hrs @ 25°C 1 hr @ 120°C 10 min @ 150°C	2.500	Transparant	12 hours	Low Viscosity, very flexible, Crystal Clear, Long worklife, LED & Semiconductor potting
IQ-CAST 4903-AB (1/1)	10 min @ 25°C	1.300	Transparant	60 min	Low Viscosity, very flexible, Crystal Clear, Long worklife, LED & Semiconductor potting
IQ-CAST 4902-BLACK-AB (1/1)	12 hrs @ 25°C 30 min @ 80°C	1.300	Black	45 min	Low Viscosity, very flexible, Black, Long worklife

Flame Retardant materials

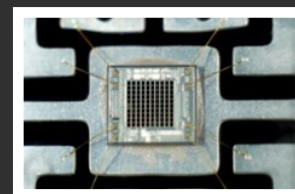


Flame retardant adhesives or resins are material solutions which are designed to prevent burning in case of a fire incident. Specific applications, e.g. in the utility, automotive and/or industrial markets, require electrical and electronic components to be protected in case of a fire-incident.

Unlike traditional adhesive solutions, designed for flame retardancy, ROARTIS® offers materials which are halogen-free, and meet the UL94-V0 standard.

	Cure	Viscosity (mPa.s)	Worklife	Remarks
IQ-BOND 2243-FR-MT	60 min @ 80°C 1 min @ 150°C	150.000	> 1 week	Low temperature cure, medium thixo, good green strength
IQ-COAT 2245-FR	30 min @ 90°C 15 min @ 120°C	1.500	48 hrs	Dip coating for hybrid circuits
IQ-CAST 9460-FR-BLACK	24 hrs @ 25°C 15 min @ 120°C	3.500	2 hrs	UL94-V0 certified potting resin
IQ-BOND 2641-FR-FC	1 min @ 50°C 10 min @ 25°C	15.000	5 min	1:1 mix ratio

Die Attach – Chip Bonding

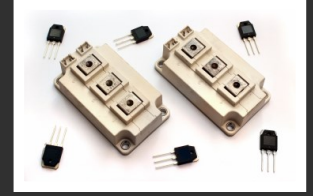


Within ROARTIS®' range of electrically and insulating adhesives, various products have a rheology optimized for die attach application. Our electrically conductive and insulating adhesives are optimized for high speed dispensing or jetting.

Electrically conductive	Cure	Viscosity (mPa.s)	Resistivity (Ohm.cm)	Worklife	Remarks
IQ-BOND 5402-CE	5 min @ 150°C 15 min @ 120°C	78.000	5×10^{-4}	24 hrs	Dispensing/Jetting
IQ-BOND 5404-CE	60 min @ 150°C 120 min @ 120°C	35.000	5×10^{-4}	48 hrs	Fine Dot Dispensing / Jetting
IQ-BOND 5404-HV-CE	60 min @ 150°C 120 min @ 120°C	140.000	5×10^{-4}	24 hrs	Higher viscous version of 5404-CE
IQ-BOND 5481-CE	Multiple stage cure: 2 hrs @ 90°C + 3 hrs @ 150°C	15.000	$< 5 \times 10^{-4}$	24 hrs	For high temperature applications, Tg: 230°C
IQ-BOND 5490-CE	Multiple stage cure: 1 hr @ 150°C + 1 hr @ 180°C	9.000	5×10^{-2}	12 hrs	300°C temperature resistance, Tg: 250°C
IQ-BOND 5132-CE	15 min @ 175°C 90 min @ 120°C	15.000	$< 5 \times 10^{-4}$	12 hrs	Flexibilized, for bonding surfaces with mismatched CTE's

Insulating	Cure	Viscosity (mPa.s)	Color	Worklife	Remarks
IQ-BOND 2487	Multiple stage cure: 2hrs @ 90°C + 3 hrs @ 150°C	18.000	Milky	24 hrs	Insulating adhesive for component and chip attachment, designed for high temperature application; Tg: 230°C
IQ-BOND 2700	5 min @ 120°C 10 sec @ 170°C	10.000	Milky/clear	5 days	Fast cure, dispensing or jetting processes, thermode or conveyor belt oven
IQ-BOND 2705	1 min @ 150°C 5 sec @ 170°C	35.000	Beige	2 days	Fast cure, dispensing or jetting processes, thermode or conveyor belt oven, fastest version based on hybrid epoxy chemistry
IQ-BOND 2722	60 min @ 80°C	100.000	Bright Yellow	5 days	Fast cure, dispensing or jetting processes, Low temperature die attach for flex substrates
IQ-BOND 2432-T	15 min @ 175°C 60 min @ 150°C 90 min @ 120°C	50.000	Milky/Off-white	12 hrs	Flexibilized, Thermally Conductive, For CTE mismatch

Sintering materials



Thermoset hybrid-sintering epoxy based adhesives or Silver-based Sintering Paste for high power die attach applications. It offers the combination of high temperature resistance, combined with best-in-class thermal and electrical conductivity. Typical applications include power semiconductors, high-brightness LED's, automotive EV power modules, RF devices, laser-diodes, solder replacement, concentrator solar cells, etc.

Despite the high filler loading, these materials have a relatively low viscosity. As such, the rheology is ideally suited for small dot dispensing & stamping.

	Cure	Viscosity (mPa.s)	Color	Work-life	Remarks
IQ-BOND 5450-HSCE	Multiple stage cure: 15 min @ 120°C + Ramp 15 min to 200°C	20.000	Silver	12 hours	<i>Hybrid sinter paste</i> High speed, fine dot dispensing High thermally & electrically conductivity (> 60 W/m.K , 9 x 10 ⁻⁶ Ohm.cm)
IQ-BOND 5451-HSCE	Multiple stage cure: 15 min @ 120°C + Ramp 15 min to 200°C	45.000	Silver	12 hours	<i>Hybrid sinter paste</i> High speed, fine dot dispensing Higher viscosity & improved electrically conductivity version of IQ-BOND 5450-HSCE (> 60 W/m.K , 3,8 x 10 ⁻⁶ Ohm.cm)
IQ-SINTER 5460	Pressure assisted : air dry 10 min @ 200°C + sinter 5 min @ 250°C Pressureless: 1 hr @ 200°C	53.000	Silver	24 hours	<i>Sinter paste</i> High thermally & electrically conductive (> 200 W/m.K , 4 x 10 ⁻⁶ Ohm.cm) Both suitable both for "Pressureless", as well as "Pressure Assisted" Sintering
IQ-SINTER 5461	Pressure assisted : air dry 10 min @ 200°C + sinter 5 min @ 250°C Pressureless: 1 hr @ 200°C	160.000	Silver	12 hours	<i>Sinter paste</i> High thermally & electrically conductive (> 200 W/m.K , 5 x 10 ⁻⁶ Ohm.cm) Both suitable both for "Pressureless", as well as "Pressure Assisted" Sintering



Functional Inks



ROARTIS® offers a wide range of ink solutions across multiple markets IoT, consumer electronics, medical, automotive and building useable for screen & inkjet print applications.

Like most things in electronics, the majority of applications that incorporate printed electronics are getting smaller in dimension and more complex in functionality. Our ability to formulate inks that address the demands of fine line printing, while maintaining robust conductive and other functional properties sets has led to technology innovation within our comprehensive portfolio of inks for printed electronics. In order to meet the desired application requirements, we offer support through the product selection process for printed electronics materials.

Electrically Conductive	Color	Cure	Viscosity (mPa.s)	Sheet Resistivity (Ohm/sq/25µm)	Storage	Remarks
IQ-INQ 1000	Silver	15 min @ 120°C	15.000	0,025	12 months	Standard for Screen printing, Economical
IQ-INQ 1002	Silver	15 min @ 120°C	15.000	0,025	12 months	Excellent Elongation

Contact us or one of our distributing partners



Offices, Lab, Production, Shipping and Warehousing in Genk, Belgium



www.ROARTIS.com - info@roartis.com



ROARTIS[®]

Adhesives, Coatings, Inks & Resins for
Electronic & Industrial Applications

www.ROARTIS.com - info@roartis.com