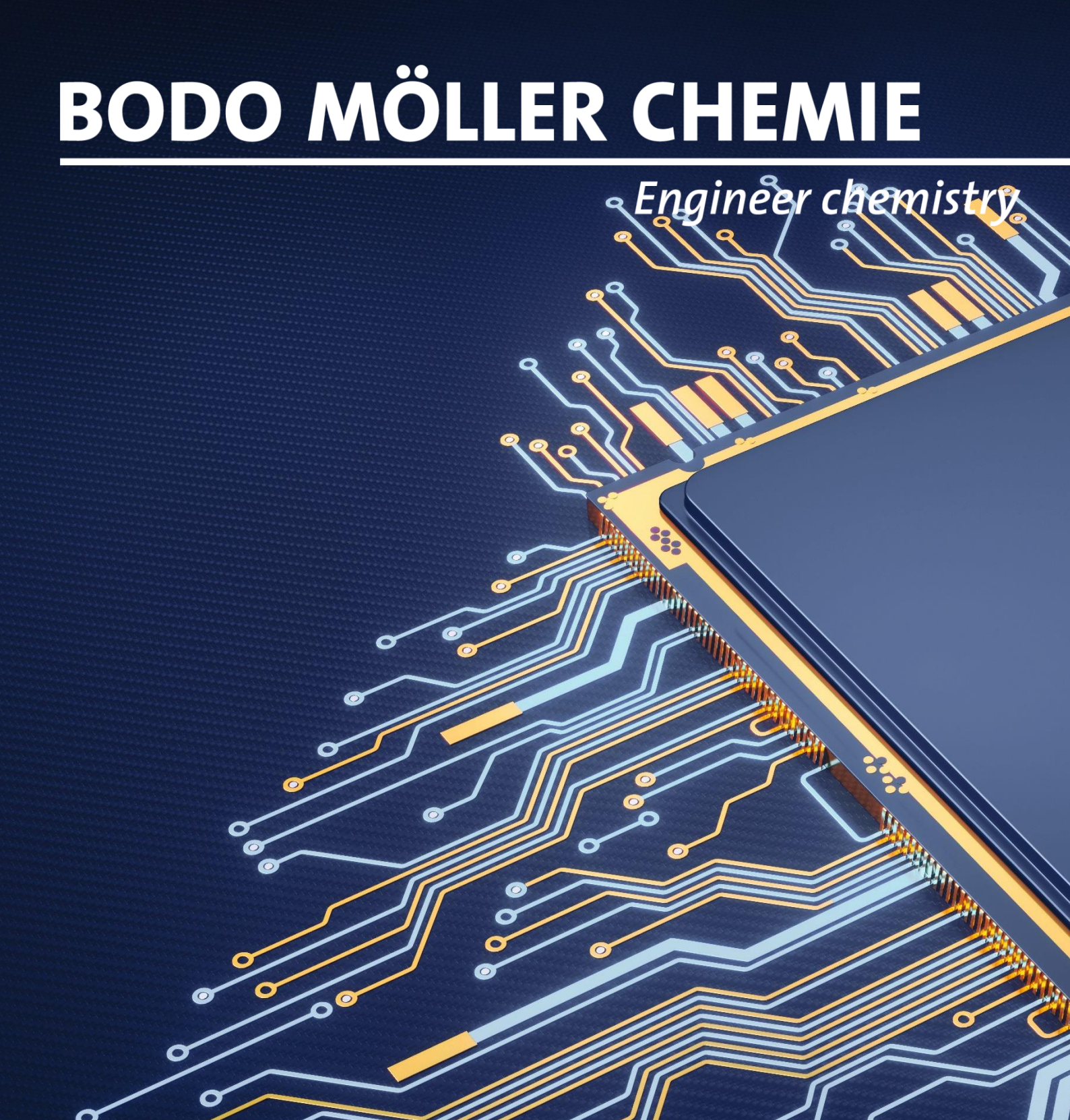


BODO MÖLLER CHEMIE

Engineer chemistry

A 3D illustration of a circuit board with a chip, featuring glowing blue and orange traces on a dark blue background. The traces are intricate and follow a complex path across the board. The chip is a dark, rectangular component with a grid of pins visible on its underside. The overall aesthetic is high-tech and futuristic.

Thermal Interface Materials

GAP PAD® Thermally Conductive Materials

GAP PAD® products from Henkel are soft, compliant thermal pads that provide an effective thermal interface between heat sinks and electronic components, where uneven surfaces, air gaps and rough surface textures are present. These thermally conductive pads offer high conformability to reduce thermal resistance, even in large gaps.

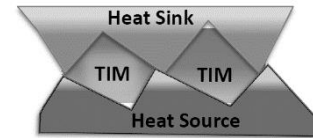
In addition to effective heat dissipation, GAP PAD® materials also help to reduce vibration loads and absorb shocks in a variety of applications.

Applications: GAP PAD® materials are well suited for a wide range of industries and applications. They are used in many types of assemblies in electronics, telecommunications, automotive, medical, aerospace, and satellites.

Bodo Möller Chemie recommends:

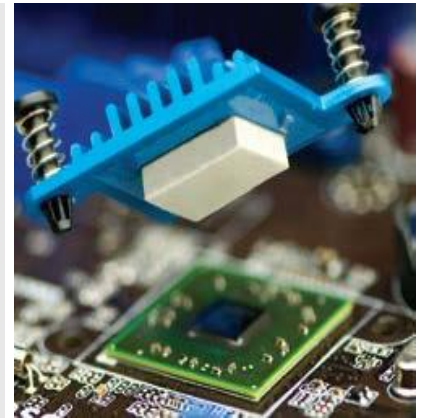
GAP PAD® TGP 1000VOUS (Ultrasoft)

GAP PAD® TGP HC 5000 (soft with high thermal conductivity)



Benefits of GAP PAD® Thermally Conductive Materials:

- Eliminate air gaps to reduce thermal resistance
- High conformability reduces interfacial resistance
- Electrical insulating
- Low-stress vibration dampening
- Shock absorbing
- Easy material handling
- Simplified application
- Puncture, shear and tear resistance
- Improved performance for high-heat assemblies



Liquid Gap Fillers

Bergquist® Gap fillers are thermally conductive, liquid gap filling materials that improve thermal performance and allow easier dispensing for volume production. They are supplied as two-component systems that crosslink at room temperature. The gap fillers create a soft, thermally conductive form-in-place elastomer that is ideal for bonding heat-generating components to a metal housing or heat sink, resulting in maximum performance of the individual components and the device as a whole.

Bodo Möller Chemie recommends:

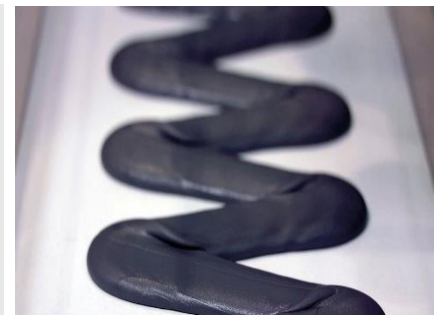
GAP Filler TGF 1500 (drip-free)

GAP Filler TGF 3600 (Very good thermal conductivity)

Applications: Gap fillers are ideally suited for applications where pad configurations are not the first choice, and can be used to replace grease or potting compounds. They are currently used in many industries, including: power supply, telecommunications, automotive applications or electromagnetic Interface (EMI) shielding.

Benefits of Liquid Gap Fillers:

- Ultra-low modulus for minimal stress during assembly
- Excellent adaptability to complicated geometries
- One solution for multiple applications
- Efficient use of materials
- Very easy to automate



HI-FLOW Phase Change Interface Materials (PCM)

HI-FLOW phase change materials are an excellent replacement for thermal paste and serve as a high-performance thermal interface material between a CPU or other heat generative components and a heat sink. At room temperature, the films are solid and liquify as the board heats up. In doing so, they provide high reliability without a "pump out" effect.

Applications: HI-FLOW materials are suited for consumer and industrial electronics, automotive, medical, aerospace and telecommunications applications such as:

- UPS and SMPS AC/DC, DC/DC or linear power supplies
- Between a CPU and heat sink
- Power conversion devices
- Fractional and integral motor control
- Leaded, surface mount and power module assemblies

Bodo Möller Chemie recommends:

HI-FLOW THF 1600P (good electrical insulation and robust)

HI-FLOW THF 3000UT (high thermal conductivity)



Benefits of HI-FLOW PCM:

- No „Pump-Out“-effect
- Easier handling
- High thermal performance helps ensure CPU reliability
- Easier material handling and shipping
- Simplified application process
- Simplified application that can be easily automated

SIL PAD® Thermally Conductive Insulators

SIL PAD® thermally conductive insulators are a clean and efficient alternative to mica, ceramic or thermal paste and are used on a wide variety of components in the electronics industry.

Applications:

- Heat conduction between power transistors, processors or other heat-generating components and a heat sink or rail.
- Electrical insulation of components and power supplies from heat sinks and/or brackets
- Thermal interface for discrete semiconductors requiring low pressure clamp mounting

Bodo Möller Chemie recommends:

SIL PAD® TSP 1600S (Low thermal impedance)

SIL Pad® K1300 (durable, good cut-through properties)



Benefits of SIL PAD® Thermally Conductive Insulators:

- Excellent thermal performance
- Eliminates the clutter of grease
- More durable than mica
- Less costly than ceramic
- Resistant to electrical shorting
- Easier and cleaner to apply
- Better performance for today's high-heat compacted assemblies
- A specific interfacial performance that matches the need
- Efficient “total applied cost”

BOND-PLY Adhesive Tapes

BOND-PLY materials are high performance, thermally conductive pressure sensitive adhesives. They are available in a PSA or laminating format and are used to replace thermosetting adhesives, screw and staple assembly. Repeated high continuous use temperatures increase adhesive strength. BOND-PLY materials are supplied in sheet, die-cut, roll and tabulated forms. Available in thickness range of 3 to 11 mils. Custom coated thickness.

Applications: BOND-PLY adhesive tapes attach heat sinks to a graphics processing unit, power converter PCB or to a drive processor. They attach heat spreaders to a motor control PCB.

Bodo Möller Chemie recommends:

BOND-PLY TBP 850 (excellent dielectric barrier)

BOND-PLY TBP 400 (unreinforced for low energy materials)

Benefits of BOND-PLY Adhesive Tapes:

- Provides an excellent dielectric barrier
- Excellent wet-out to most types of component surfaces including plastic
- BERGQUIST® BOND-PLY TBP 400 is unreinforced to increase conformance and wet-out on low surface energy materials
- Eliminates need for screws, clip mounts or fasteners



LIQUI-BOND Liquid Adhesives

BERGQUIST® LIQUI-BOND liquid adhesives are high performance, thermally conductive, liquid adhesive materials. These form-in-place elastomers are ideal for coupling “hot” electronic components mounted on PC boards with an adjacent metal case or heat sink. High cohesive and adhesive strength and they cure to a low modulus. **Applications:** Automotive electronics, telecommunications, computers and peripherals and between any heat-generating semiconductor and a heat sink.

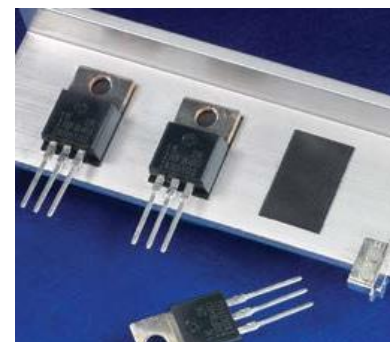
Bodo Möller Chemie recommends:

LIQUI-BOND TLB SA2000 (one-part material heat curing)

LIQUI-BOND TLB SA3500 (two-part material, room temperature storage)

Benefits of LIQUI-BOND Liquid Adhesives:

- Low modulus provides stress-absorbing flexibility
- Supplied as a one-part material with an elevated temperature curing system
- Offer infinite thickness variations with little or no stress during placement
- Eliminates the need for specific pad thickness and die-cut shapes for individual applications



Cutting Competence Center

Bodo Möller Chemie offers a complete cutting service for all TIM materials from Henkel. We support our customers in the selection of the appropriate material and can supply the parts for series production or sampling. In a single operation, the thermally conductive material can be cut, tested and also optically measured, both with and without the protective film underneath, in accordance with the specified drawing. Almost all shapes are possible and production from prototypes to large series can be cut. Thanks to the digital process, shape adjustments are possible.

Individual precision cutting of heat conducting foils for electronic applications.

- Digital cutting
- Kiss-cut and through-cut
- Customized fabrication
- From prototype to large series



Have we piqued your interest? Our specialist will be pleased to advise you:

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www.bm-chemie.com/thermal-interface-materials