

3M™ Thermally Conductive Acrylic Interface Pad 5570N

Product Description

3M™ Thermally Conductive Acrylic Interface Pad 5570N is designed to provide a preferential heat transfer path between heat generating components like integrated circuit chips and heat spreaders like aluminum heat sinks. 3M™ Thermally Conductive Acrylic Interface Pad 5570N consists of a highly conformable, slightly tacky acrylic elastomer sheet filled with thermally conductive ceramic particles.

Key Features and Benefits

- Soft for good conformability even to non-flat integrated circuit (IC) surfaces and heat spreading blocks
- Little to no siloxane gas/oil bleeding that can cause electric connection failures
- High pressure relaxation helps reduce pressure to electric components
- Good electrical insulation properties
- Slight tack allows easy pre-assembly
- Good wetting performance for better thermal conductivity

Product Construction/Material Description

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

3M™ Thermally Conductive Acrylic Interface Pad 5570N	
Property	Value
Color	White with light gray dots
Base resin	Acrylic
Pad Thickness	0.5, 1.0, 1.5, 2.0 mm
Primary Filler Type	Ceramic
Product Liner	PET Film
Roll Length	Standard: 33 M Custom size can be supplied by user requests.

Applications

- IC packaging heat conduction
- Heat sink
- Chip on film (COF) thermal management for uniform temperature
- LED board thermal interface management
- LED TV driver IC Chip
- General gap filling in electronic device
- Electric vehicle/hybrid battery for automotive

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Application Techniques

- Substrate surfaces should be clean and dry prior to pad application. Isopropyl alcohol (isopropanol) applied with a lint free wipe or swab should be adequate for removing surface contamination such as dust or finger prints. Do not use “denatured alcohol” or glass cleaners which often contain oily components. Allow the surface to dry for several minutes before applying the pad. More aggressive solvents (such as acetone, methyl ethyl ketone (MEK) or toluene) may be required to remove heavier contamination (grease, machine oils, solder flux, etc.) but should be followed by a final isopropanol wipe as described above.
- Be sure to read and follow the manufacturers’ precautions and directions when using primers and solvents.
- For best product performance, it is important to use recommended pressure and time conditions to achieve as much wetting as possible.
- Ideal application temperature range is from 0°C to 40°C. Initial application to surfaces at temperatures below 30°C is not recommended because the pad becomes too firm to be wetted readily. However, once properly applied, low temperature performance is generally satisfactory.

Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Final product specifications and testing methods will be outlined in the products Certificate of Analysis (COA) that is shipped with the product.

3M™ Thermally Conductive Acrylic Interface Pad 5570N		
Property	Method ¹	Typical Value
Thermal conductivity (W/mK) ^b	ASTM D5470	1.3
Hardness (Shore 00)	TS-KOR-217	50
Density (grams/cm ³)	TS-TM-441	1.75
Flammability 0.5 mm thickness 1.0 - 2.0 mm thicknesses	UL 94	V-2 V-0
Dielectric Strength (kV/mm)	ASTM D149	20
Volume Resistivity (Ω-cm)	JIS K6249	2.9 x 10 ¹²

¹Methods listed as ASTM are tested in accordance with the ASTM method noted

3M™ Thermally Conductive Acrylic Interface Pad 5570N Heat Resistance ^{2,3}				
Duration (hrs)	Initial	1000	2000	5000
Thermal Conductivity (W/mK)	1.3	1.4	1.4	1.4
Hardness (Shore 00)	48	49	50	50
Appearance	-	No effect	No effect	No effect

²Aged by dwelling at 110°C high temperature chamber

³The end use customer application, design and verification testing will determine the final in-use effective temperature range based on each application’s environmental conditions

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is commercially available from 3M. The commercially available product will have a COA specification established. The COA contains the 3M specifications and test methods for the products performance limits that the product will be supplied against. The 3M product is supplied to 3M COA test specifications and the COA test methods. Contact your local 3M representative for this product’s COA.

This technical data sheet may contain preliminary data and may not match the COA specification limits and/or test methods that may be used for COA purposes. Final product specifications and testing methods will be outlined in the products Certificate of Analysis (COA) that is shipped with the commercialized product.

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Storage and Shelf Life

The shelf life of 3M™ Thermally Conductive Acrylic Interface Pad 5570N is 12 months from the date of manufacture when stored in the original packaging materials and stored at 21°C (70°F) and 50% relative humidity.

Regulatory: For regulatory information about this product, contact your 3M representative.

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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