LiPOLY®
SHIU LI TECHNOLOGY CO.,LTD

DTT55-s

Two-part Curable Thermal Grease (for immersion cooling systems)

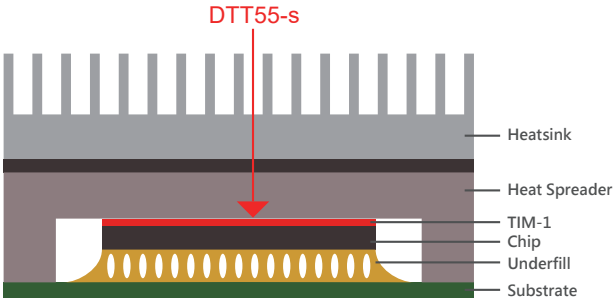
LiPOLY DTT55-s is a high-reliability, curable two-part thermal interface material (TIM) specifically engineered to meet the long-term operational stability requirements of high-power AI chips in immersion cooling environments. It is fully compatible with prolonged exposure to cooling fluids. The material exhibits high conformability and deformation capability, effectively filling interfacial gaps and compensating for assembly tolerances. After curing, it forms a structurally stable, high-thermal-conductivity interface layer between GPUs, AI accelerators, ASICs, and cold plates or heat dissipation modules, delivering efficient heat transfer, low interfacial thermal resistance, and a long-term reliable thermal path. Compared with non-curable thermal interface materials, DTT55-s prevents material loss, displacement, and performance degradation during prolonged immersion in cooling fluids, ensuring stable thermal performance over extended operation. It supports room-temperature storage without cold-chain transportation. Engineered for immersion-cooled AI servers operating under high heat flux and continuous duty conditions, provides a reliable thermal management solution for next-generation high-power computing platforms.

FEATURES

/ Thermal Conductivity: 5.0 W/m*K, high thermal performance, low thermal resistance
/ Liquid high-flow formulation: with excellent gap-filling capability, adhesion, and dispensability, suitable for high-volume manufacturing processes.
/ High structural stability: after thermal curing, it withstands prolonged fluid flow and thermal cycling.
/ Immersion Compatible: Non-soluble, non-swelling, no contaminant leaching
/ High Reliability: Stable thermal performance under prolonged high-temperature operation.

TYPICAL APPLICATION

/ Designed to provide efficient thermal transfer for the cooling of chip packaging as TIM-1.
/ AI GPU modules (NVIDIA / AMD / in-house ASICs)
/ AI immersion-cooled servers
/ High-power accelerator cards (OAM, HGX, custom modules)
/ Liquid cooling / hybrid immersion cooling systems
/ High-performance computing (HPC) systems
/ Industrial servers / edge computing platforms
/ Power modules / power electronics cooling
/ Telecom / 5G high-density compute modules
/ EV / green energy high-power electronic modules



CONFIGURATIONS

/ Cartridges: 50ml, 400ml
/ Other special and custom sizes are available upon request

DISPENSING INSTRUCTIONS

Use the disposable plastic static mixing nozzles to mix parts A and B together to the desired ratio. Liquid gap fillers can be dispensed using an automatic dispensing machine or a manual dispensing tool that can be provided by LiPOLY upon request/purchase. The disposable plastic static mixing nozzles cannot be re-used.

STORAGE

Two-part liquid gap fillers should be stored in climate-controlled environments at or below 30°C. Keep liquid gap fillers away from direct sunlight and away from high-temperature environments.

PRESERVATION

It can be preserved for 24 months under the condition of unopened and under room temperature 30°C. (Note:The product may experience oil-powder separation after being stored for an extended period, which is a natural sedimentation phenomenon caused by the density difference between silicone oil and powder. This does not affect its functionality and can be used as normal. It is recommended to stir the product evenly before use.)

PRECAUTIONS

The two-part liquid gap filler may not cure properly if it comes into contact with certain substances, including amine, sulfur, organophosphorus compounds, and organotin compounds. Please avoid the following substances when handling: (N, P, S, Sn, Pb, Hg, Sb, Bi, As) Ensure a clean mixing container is used (e.g.: paper cup or plastic cup) before injecting the A and B parts into the mixing container. The plasticizer, wax from the cups, varnish or the epoxy from the oven may contaminate the A and B parts. You are reminded to pre-test the gap filler before using it.

PLEASE NOTE

It's recommended that the diameter of mixing tube outlet should be 3mm at least, which can solve the possible problem of poor fluidity caused by ambient temperature.

TYPICAL PROPERTIES

PROPERTY	DTT55-s	TEST METHOD	UNIT
Color	White (A part) Gray (B part)	Visual	-
Solid content	100% (Two-part : 100:100)	-	-
Viscosity A	85	ISO 3219	Pa.s
Viscosity B	85	ISO 3219	Pa.s
Density	2.7	ASTM D792	g/cm³
Shelf life	24 months	-	-
ROHS & REACH	Compliant	-	-
SOLID(AFTER CURE)			
Thermal conductivity	5.0	ASTM D5470	W/m*K
Bond line thickness	30	-	μm
Hardness	25	ASTM D2240	Shore A
Volume resistivity	>10^{12}	ASTM D257	Ohm-m
Dielectric breakdown	14	ASTM D149	KV/mm
Working temp (long term)	-60 ~ 200	-	°C
Operating ambient temp	20 ~ 30	-	°C
CURE SCHEDULE			
Pot life @ 25°C	60	By LiPOLY	min

* Immersion cooling compatibility and reliability test reports are available upon request. Please contact us for further information.