

COOLTHERM® SF-1000 SYNTACTIC FOAM

Technical Data Sheet

CoolTherm® SF-1000 foam is a silicone syntactic foam designed to be applied in the thermal venting path of lithium-ion battery cells to encapsulate wire bonds, and protect sensitive electronics.

CoolTherm SF-1000 foam acts as a dispensable cure-in-place fire blanket, easily allowing a single cell vent to break through, while protecting all other cells from fire and hot gasses trapped in the module or pack.

The viscosity is optimized for compatibility with most meter/mix/dispense (MMD) equipment and can be applied at high rates.

Features and Benefits

Thermal Runaway Mitigation: allows for individual cell venting while protecting other cells and electronics from a fire event.

Non-Sag: provides resistance to sagging and self-leveling during application, preventing unnecessary potting of entire module.

Non-flammable: provides excellent flame retardancy; meets requirements of UL 94 V-0 standards.

Easy to Apply: dispenses easily utilizing standard MMD equipment and simple static mix tips with material properties compliant with all tested pumping equipment.

Quick Cure: mixed foam achieves full cure in 15 minutes at room temperature.

Durable: protects sensitive wire bonds from vibration, foreign objects, and damage.

High Dielectric Strength: cured foam offers protection from electrical arcing and prevents inadvertent touching of encapsulated electrical components.

Application

Surface Preparation: Remove all contamination and loose particles from the surfaces to be encapsulated.

Mixing: CoolTherm SF-1000 resin and hardener are subject to settling over time in storage. Thoroughly re-mix each component in its original container to ensure complete dispersion of filler material before combining resin and hardener.

Recommended mixing methods and times:

- Paint Shaker: 30 minutes
- Tumbler: 12 hours
- Roller: 24 hours

Mix CoolTherm SF-1000 resin with CoolTherm SF-1000 hardener at ratio of 1:1, by weight or volume.

Applying: Apply CoolTherm SF-1000 foam to the area to be filled by manually dispensing through a static mix tip or using MMD equipment. Contact your Parker Lord representative for assistance in using MMD equipment.

Curing: Allow foam to cure for 15 minutes at room temperature (25-30°C).

Shelf Life/Storage

Shelf life of each component is six months when stored in a clean, dry environment at 5-30°C in original, unopened container.

Typical Properties*

	SF-1000 Resin	SF-1000 Hardener	Mixed
Appearance	White Paste	Gray Paste	Gray Paste
Viscosity, cP	65,000	30,000	Thixotropic
Specific Gravity	1.00	1.00	1.00

*Data is typical and not to be used for specification purposes.

Typical Cured Properties*

Thermal Conductivity, W/m-K Hot Disc Transient Method, ISO 22007-2	0.4
Hardness Shore OO, ASTM D 2240	85
Tensile Strength, MPa (psi) ASTM D 638	
@ 25°C	0.5 (72.5)
@ -40°C	1.0 (145.0)
@ 80°C	0.4 (58.0)

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Cautionary Information

Before using this or any Parker Lord product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

Verify Volatile Organic Compounds (VOC) requirements with the applicable local, regional and state air quality authorities before importing, selling or using this product. VOC rules, thresholds and reporting obligations vary by jurisdiction; compliance is the responsibility of the importer/seller/owner.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

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