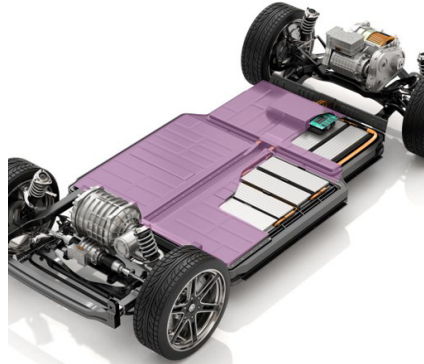


# Heat protective and fire-resistant coatings for EV battery housings & covers

TEGO® Therm L 300, TEGO® Therm HPG 4000 and TEGO® Therm HPG 6806



## Enhanced Fire Resistance

Due to the projected strong growth in electric mobility, the demand for batteries is expected to significantly increase in the coming years. This trend is accompanied by strict safety standards that require the use of thermal insulation barriers in **lithium-ion batteries** used in EVs.

The goal is to reduce the risk of fires resulting from infrequent but hazardous thermal runaway incidents in EV batteries. **Thermal runaway** starts in a battery cell and can be triggered by a short circuit, cell malfunction, or external mechanical failure.

Fire-resistant coatings applied to battery covers represent one approach to reduce the risk of thermal runaway incidents.

The **TEGO® Therm** product line facilitates the formulation of sprayable coatings that provide excellent fire resistance and thermal insulation characteristics. The combined use of **TEGO® Therm HPG** granules and the heat-stable **TEGO® Therm** binder allows to formulate flame-retardant coatings that meet the **UL 94 V-0 fire safety standards**.

## TEGO® Therm portfolio – At a Glance

### TEGO® Therm L 300

- Liquid waterborne polysiloxane hybrid binder with solid content ~50%
- Superior heat stability
- Low smoke and odor development

### TEGO® Therm HPG 4000

- Granules with superinsulation properties from passivated amorphous SiO<sub>2</sub> core
- High hydrophobicity
- Non-combustible/  
Non-flammable

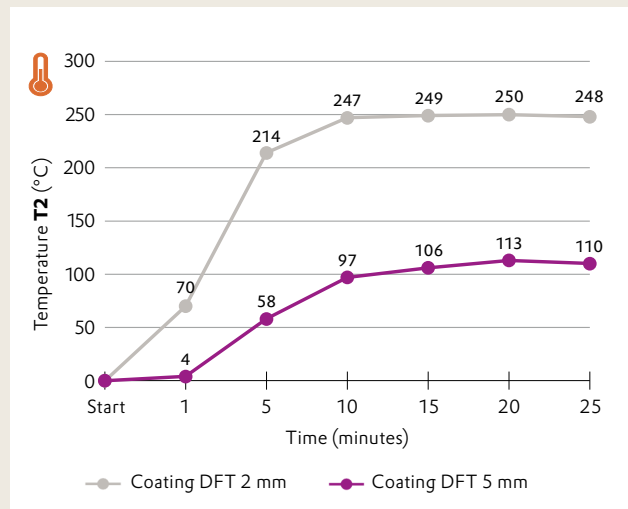
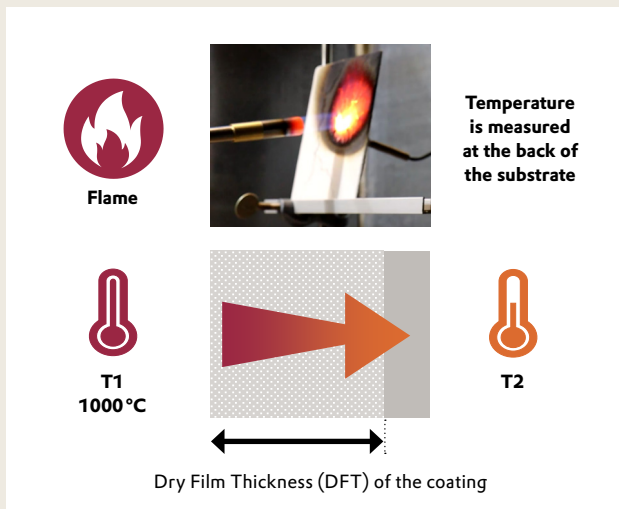
### TEGO® Therm HPG 6806

- Granules with excellent insulation properties from amorphous SiO<sub>2</sub> core
- Small particle size enable smooth coating surfaces
- Excellent dimensional stability

Coatings formulated with TEGO® Therm effectively minimize heat transfer to the underlying substrate while preserving superior mechanical integrity during direct

jetflame testing. The higher the layer thickness of the coating, the slower the rise and lower the temperature at the backside of the substrate.

### Fire Resistance Test – 20 minutes exposure to a 1000°C jetflame



Coatings based on TEGO® Therm L 300 binder combined with TEGO® Therm HPG granules can reach a thermal conductivity ( $\lambda$  value) of less than 40 mW/(m K). Thin coatings with a dry film thickness (DFT) of only a few

millimeters, suitable for applications with limited space, enable effective insulation and protection of the substrate. Even with a flame temperature of >1000°C, the temperature on the backside peaked at <250°C.

#### GUIDING FORMULATION

#### HANDLING VIDEO

Production and Application

#### IMPORTANT DATA SHEETS

Find Technical Data Sheet, Regulatory Data Sheet and Sample Order

#### TEGO® Therm



#### Technical Introduction



#### TEGO® Therm L 300



#### TEGO® Therm HPG 4000



#### TEGO® Therm HPG 6806



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