

Technical Information

TEGOMER® H-Si 6441 P

TEGOMER® H-Si 6441 P is a multifunctional polyester modified siloxane with excellent compatibility in thermoplastic and thermoset resins.

Physical properties

Melting point	approx. 54 °C
Water content	< 0.1 %
Delivery form	Pellets

Application

TEGOMER® H-Si 6441 P is used as additive to improve the scratch resistance of engineering resins, TPEs and polyolefins.

TEGOMER® H-Si 6441 P lowers the COF of materials such as TPE-Vs.

TEGOMER® H-Si 6441 P improves optical and mechanical properties of PA/GF and PP/GF based compounds.

TEGOMER® H-Si 6441 P is an internal lubricant and release agent to be used for instance for mold release of SEBS based air bag covers.

The additive is well suited to improve bulk and surface characteristics of final parts, especially notched impacts strength in filled polyolefins.

Processed to a masterbatch TEGOMER® H-Si 6441 P is suitable to replace fluorine free polymer processing aids (PPA) to prevent the film against shark skin appearance.

TEGOMER® H-Si 6441 P is used in:

- polyolefins
- polyamides
- polyesters/ polycarbonates
- thermoplastic elastomers
- thermosets

Benefits

TEGOMER® H-Si 6441 P improves polymer processing:

- better mould fill and release
- good internal lubrication
- improved rheology of polymer melt

TEGOMER® H-Si 6441 P improves surface properties:

- enhanced scratch and wear resistance
- lower surface friction
- higher surface gloss
- better glass fibre wetting/lower fibre brakes

TEGOMER® H-Si 6441 P improves bulk properties:

- higher impact strength
- higher tensile strength
- reduction of brittleness
- hydrophobizing

Dosage

TEGOMER® H-Si 6441 P is a solid pellet and can be added easily in most production processes, especially in comparison to liquids like silicone oils.

Depending on the required final properties the optimum dosage of TEGOMER® H-Si 6441 P lies between 0.1% and 5.0%, for instance:

- 0.1 – 0.2 % for polyolefin films without melt fractures
- 0.3 – 0.5 % for improved demoulding of SEBS
- 0.5 – 2.0 % for glass fibre filled PA or PP based compounds
- 1.0 – 2.0 % for improved scratch resistance of engineering resins.

If TEGOMER® H-Si 6441 P is used in thermosets (e. g. epoxy or PU in flooring application) it is necessary to add TEGOMER® H-Si 6441 P as a liquid dilution. The following table gives the solubility of TEGOMER® H-Si 6441 P in different solvents, which can be used for the preparation of dilutions.

30 % TEGOMER® H-Si 6441 P in	Soluble at RT	Soluble at 75 °C
Dowanol DPnB	no	yes
MPA	yes*	yes
Toluene	Yes	yes
Solvesso	Yes	yes
Ethanol	no	yes
Ethylacetate	yes*	yes
Butylacetate	yes*	yes

*solution must be prepared at higher temperature (75 °C)

Food Contact Status

USA: FDA 21 CFR

TEGOMER® H-Si 6441 P may be used as an additive in flexible polyolefin films (21 CFR 177.1520), EVA films, PS films and in single-use PET films with a maximum level of 100 mg/m² food contact area. In repeated-use PET films 600 mg/m² food contact area of TEGOMER® H-Si 6441 P can be used.

A concentration of 100 mg/m² food contact area means for instance:

- 0.1 % TEGOMER® H-Si 6441 P in a 100 µm film
- 1.0 % TEGOMER® H-Si 6441 P in a 10 µm film assuming a film density of 1 g/cm³, respectively.

EU: EC 10/2011

According to EC 10/2011 TEGOMER® H-Si 6441 P may be used as a polymer production aid (PPA) up to a maximum level of 100 mg/m² food contact area.

TEGOMER® H-Si 6441 P can be used as a polymer production aid, whereas it is not yet listed in EC 10/2011 to be used as an additive.

Registration

TEGOMER® H-Si 6441 P is listed in the following chemical inventories:

EINECS, TSCA, DSL, ENCS, IECSC, KECL, TCSI

Based on the submitted information of our raw material suppliers we can confirm, that TEGOMER® H-Si 6441 P is compliant with EC Regulation 1907/2006 (REACH).

Storage Stability

TEGOMER® H-Si 6441 P is stable for a minimum of 1 year.

TEGOMER® H-Si 6441 P melts at about 54 °C. Thus, the material might clump together if stored or transported at temperatures above 30 °C. If possible do not store palettes on top of each other.

Packaging

25 kg bag
700 kg pallet (28 x 25 kg)

Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in case of accidents and fire
- toxicity and ecological effects

is given in our material safety data sheets.

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