

Technical Information

TEGOMER® H-Si 6441 P

TEGOMER® H-Si 6441 P is a polyester modified siloxane which is delivered in pellet form with excellent compatibility in thermoplastic and duroplastic 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 is used for PA/GF and PP/GF based compounds.

TEGOMER® H-Si 6441 P is used as compatible internal lubricant and release agent, e. g. 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.

TEGOMER® H-Si 6441 P can be used as additive for:

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

Benefits

TEGOMER® H-Si 6441 P used as an additive for polymer formulation.

It improves the processing by:

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

The surface properties are improved by:

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

It improves bulk properties by:

- 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.

The amount used depends on the required properties. The concentration can range from 0.1 to 5.0 % depending on polymer or compound.

Typical examples are the following:

- 0.1 – 0.2 % TEGOMER® H-Si 6441 P for polyolefin films without melt fractures
- 0.3 – 0.5 % TEGOMER® H-Si 6441 P for improved demoulding of SEBS
- 0.5 – 2.0 % TEGOMER® H-Si 6441 P for 30 to 50 % glass fibre filled compounds (PP or PA based)
- 1.0 – 2.0 % TEGOMER® H-Si 6441 P 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 has to be prepared at higher temperature (75 °C)

Handling

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

Food Contact Status

FDA

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 and repeated-use PET films with the following limitations:

- PP, PE, EVA, PS, single-use PET:
100 mg/sqm food contact area (for a 100-µm-film with a density of 1 g/cm³ this means that a dosage of 0.1% TEGOMER® H-Si 6441 P is allowed)
- Repeated-use PET:
600 mg/sqm food contact area

EC 10/2011

TEGOMER® H-Si 6441 P may be used as a polymer processing aid (PAA) in polymer films ($\leq 100 \mu\text{m}$ assuming a density of 1 g/cm³) with a dosage of up to 0.1%.

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.

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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Evonik Nutrition & Care GmbH
Goldschmidtstraße 100
45127 Essen, Germany
Phone Europe +49 201 173 2665
Phone Asia +86 21 61191 125
Phone Americas +1 804 727 0700
interface-performance@evonik.com
www.evonik.com/Interface-performance

