

## TECHNICAL DATA SHEET

### LineGard Mar-Protect

*LineGard Flex Scratch-Resistant Coating for PC*



Special coating for polycarbonate providing high scratch-resistance and hardness combined with improved climatic and chemical resistance.

#### Typical Properties

Revision: 06/2013

#### Standard

#### LineGard PC-Flex

#### General Properties

Bulk Density	*	ISO 1183	1,2 g/cm <sup>3</sup>
Water Absorption 24h, 23°C	*	ISO 62	< 8 mg/kg

#### Mechanical Characteristics

Tensile Strengths	*	ISO 527	60 MPa
Elongation at Tear	*	ISO 527	110%
Modulus of Elasticity	*	ISO 527	2200 Mpa
Impact Resistance	*	ISO 179	nicht gebrochen
Abrasion (Taber-process; 500 rotations; CS- 10F; 500g)		ISO 9352	≤ 8 % ΔHaze
Thickness of Layer			4 - 8 μm
Adhesive Properties 0,5/1,0/2,0 h boiling period at 95°C		ISO 2409	GT 0/0/0

#### Thermal Characteristics

Vicat Diluting Temperature VST/B 50	*	ISO 306	150°C
Constancy Temperature HDT/A (1,8 N/mm <sup>2</sup> )	*	ISO 75	135°C
Temperature of Permanent Use			
Linear Coefficient of Cubical	*	DIN 53446	115°C
Thermal Expansion (α)	*	DIN53752	65x10 <sup>-6</sup> K <sup>-1</sup>
Heat Conductibility (λ)	*	DIN52612	0,21 W/mK
Specific Heat (c)	*		1,3 J/gK

#### Optical Characteristics

Refractive Index			1,4425
Transparency 380-780 nm D = 3 mm		DIN 5036	> 86%
Deviation Angle	*	DIN 52305	≤ 5 Bg'
Refractive Power	*	DIN 52305	≤ 0,1 dpt

#### Electrical Characteristics

Specific Volume Resistivity	*	DIN VDE 0303	10 <sup>15</sup> Ωcm
Dielectric Strength	*	DIN EN 60243	> 30 kV/mm

#### Special Characteristics

Behaviour in Fire	*	DIN 4102	Fire Classification B 2
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### Chemical Resistance\*\*

Acetone, 100%	Resistant
Ammonia, 25%	Resistant
Acetic Acid, 100%	Resistant
Gasoline Mixture for MPA	Resistant
Butyl Acetate, 100%	Resistant
Citric Acid, 95%	Resistant
Dichloromethane, 100%	Not Resistant
Diesel Fuel, 100%	Resistant
Ethanol, 100%	Resistant
Ethyl Acetate, 100%	Resistant
Formaldehyde, 37%	Resistant
Milling Oil, 100%	Resistant
Glass Cleaner, 100%	Resistant
Isopropanol, 100%	Resistant
Potassium Hydroxide, 40%	Resistant
Methyl Ethyl Ketone, 100%	Resistant
Sodium Hydroxide, 40%	Resistant
Nitro Thinner, 100%	Resistant
Phosphoric Acid, 85%	Resistant
Nitric Acid, 65%	Resistant
Hydrochloric Acid, 32%	Resistant
Sulfuric Acid, 98%	Not Resistant
Sulfuric Acid, 85%	Resistant
Special Benzine, 100%	Resistant
Toluene, 100%	Resistant
Water, 100%	Resistant

The information is based on presently available knowledge and experiences. They do not release the processor from own tests and trials. A legally binding assurance of certain characteristics or the suitability for a specific purpose of use can not be derived from it. Possible patent rights as well as existing laws or provisions must be taken into account by the receiver of our products, who bears the responsibility.

\*\* Application of 3 - 5 ml liquid, cover, exposure 10 minutes.

**Bending Radius for LineGard PC-Flex  
in case of Additional Cold Forming**

Polycarbonate Thickness of Layer	Smallest Bending Radius
3 mm	450 mm
4 mm	600 mm
5 mm	750 mm
6 mm	900 mm
8 mm	1200 mm
10 mm	1500 mm
12 mm	1800 mm

For concrete applications will even smaller radiuses we should be glad to be at your disposal for further consultancy.