



DIAMOND
COATINGS



Diamond Coatings – DIA.HC-KRF Hard-Coat

INTRODUCTION

The DIA.HC-KRF Hard-Coat is a special coating for polymethylmethacrylate (acrylic), providing high scratch resistance and hardness, combined with improved climatic and chemical resistance.

This resistive coating protects the substrate from scratching and general wear and protects the cosmetic quality and appearance of the plastic.

DIA.HC-KRF is suitable for acrylic and PMMA substrates.

DIAMOND COATINGS LTD.

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Coating Capabilities

General Properties

Bulk density	*	DIN EN ISO 1183	1,19 g/cm ³
Water absorption 24 h, 23°C	*	DIN EN ISO 62	<30 mg/kg

Mechanical Properties

Tensile strength	*	DIN EN ISO 527	75 MPa
Elongation at tear	*	DIN EN ISO 527	104,5 %
Modulus of elasticity	*	DIN EN ISO 527	3300 MPa
Impact resistance	*	DIN EN ISO 179	12 kJ/m ²
Abrasion (Taber-process; 100 rotations; CS-10F; 500 g)		ISO 9352	<4% Haze
Thickness of layer			4 – 8 μm
Adhesive properties 0,5/1,0/2,0 h immersion period at 80°C		DIN EN ISO 2409	GT 0/0/0

Thermal Properties

Vicat diluting temperature VST/B 50	*	DIN EN ISO 306	115 °C
Constancy temperature HDT/A (1,8 N/mm ²)	*	DIN EN ISO 75	100 °C
Temperature of permanent use	*	DIN 53446	80 °C
Linear coefficient of cubical thermal expansion (α) 0 – 50 °C	*	DIN 53752	70 x 10 ⁻⁶ K ⁻¹
Heat conductivity (λ)	*	DIN 52612	0,19 W/mK
Specific heat (c)	*		1,47 J/gK

Optical Properties

Refractive index			1,429 n _D 20
Transparency 380-780 nm D = 3 mm		DIN 5036	92 %
Deviation angle	*	DIN 52305	<3 Bg'
Refractive power	*	DIN 52305	<0,05 dpt

Electrical Properties

Specific volume resistivity	*	DIN VDE 0303	10 ¹⁵ Ωcm
Dielectric strength	*	DIN EN 60243	>30 kV/mm

Special Properties

Fire behaviour	*	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%	not 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%	not resistant
Sodium hydroxide, 30%	resistant
Nitro thinner, 100%	not resistant
Phosphoric acid, 85%	resistant
Nitric acid, 65%	not resistant
Nitric acid, 50%	resistant
Hydrochloric acid, 32%	resistant
Sulfuric acid, 98%	resistant
Special benzine, 100%	resistant
Toluene, 100%	resistant
Water, 100%	resistant

** Application of 3 – 5 ml liquid, cover, exposure 10 minutes

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