NANOXID SC-OPTIC

Clear coating with optimized optical properties

Technical information

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1. General

NANOXID SC-OPTIC is a clear coat developed to procure optimized optical performances to metal or glass surfaces, while enhancing protective and easy-to-clean properties. **NANOXID SC-OPTIC** is recommended for high performance light reflectors, as well as optical coatings on glass.
NANOXID SC-OPTIC is especially designed for spray-coating application. **NANOXID SC-OPTIC** combines the hardness and clarity of glass with the advantages of organic coatings (such as easy application). It creates clear, hard and extremely thin layers only 1 to 3 µm thick.
NANOXID SC-OPTIC can be used for indoor or outdoor applications.

2. Storage and Handling

NANOXID SC-OPTIC is a one-component system. It is recommended to use the paints within of 3 months after production date. The paints should be stored in a cool place (maximum 21 °C) and protected from sunlight.
NANOXID SC-OPTIC is flammable. When using it, do not smoke and stay away from open lighting or other sources of fire, heat or sparks. Do not eat while working with the material. Read the safety data sheet before handling the material.
The cured coating is non-toxic. **NANOXID SC-OPTIC** is recommended for the production of layers conforming to the European Norms for the Safety of Toys, EN 71-3.
Working tools may be cleaned with alcohol or acetone.

3. Substrates

NANOXID SC-OPTIC is designed for stainless steel, aluminum and glass surfaces.
Other substrates can be possible but need specific approval first.
In order to achieve good adhesion, the metal surface must be free from all foreign agents, such as oil. In addition, a basic pre-cleaning is necessary in order to remove possible layers of oil, dirt or fingerprints, which interfere with adhesion. Therefore, we recommend cleaning the surface immediately before the application of **NANOXID SC-OPTIC.**

4. Application

NANOXID SC-OPTIC is designed for spray-coat-application, but may be applied also by brush or dipping.
NANOXID SC-OPTIC is ready to use and can be applied without further thinning. Should thinning nonetheless be necessary, a recommended thinner is available.
NANOXID SC-OPTIC can be used without problems at a relative humidity of up to 60%. At higher humidity levels, the forming of the layer may be disturbed. For example, the layer may appear matte.

In such a case, it has been shown to be helpful to warm the substrate before application of the coating.
Avoid applying **NANOXID SC-OPTIC** in thick layers. Otherwise, drips and runs may result, and too thick layers crack after hardening and may come off.

5. Curing

NANOXID SC-OPTIC is cured between 140°C - 200°C for about 15-30 minutes. If the temperature is too low, adhesion problems occur. If the temperature is too high, color banding and decomposing of the organic component of the layer result. This may lead to the layer coming off.
A test run in the oven to be used is recommended, since heat distribution in ovens is often highly variable. The temperature of the metal substrate therefore often varies from the selected oven temperature.
The layer continues to harden after the thermal hardening. The final hardness is only reached after a few weeks.

6. Technical data

Properties and composition	Clear coat with optimized optical performances	• Anti-fingerprint and easy to clean • Outstanding stain resistance • Extremely scratch resistant • Low haze
Applications	**Ideal for metallic light reflectors and optical coatings on glass.**	
Coating technology	Application	Spray coating; dipping and brush possible.
	Curing	Hot air or Infra-red
Description	Substrate	Stainless steel, Aluminum, Glass
	Coating Thickness	2 µm
	Gloss 60°	≥ 80 GU on brushed metal
	Colors	Transparent coating
Performances (for metal substrates)	Resistance to cracking on bending	≤ 1 T
	Impact resistance	18 J
	Pencil Hardness	≥ H
	Nail test (plastic tool)	≥ 20 N
	Cross-cut Test	0
	Surface “pencil” hardness	≥ 2H
	Clemen	± 2 kg
	Salt spray test (1000h)	No blistering
	QCT (500h CPI2)	No blistering
	Hot water test	No blistering, no loss of adhesion after 1

	hour
Cyclic Heat Resistance	ΔE<2 at 120 C°
Light Resistance (UV 310 nm)	ΔE<1 for 500 h, 550 W/m²
Foodstuffs resistance	Good to very good (at 25°c and 90°C)
Fingerprint resistance	Low visibility and easy removability
Resistance to cleaning agents	Good to very good
Resistance to acids and bases	Good to very good
Resistance to solvents : • Aliphatics and alcohols • Ketones • Aromatics	 Good to very good Low Good to very good
Print ability	Generally good, but to be tested by customer
Resistance to mineral oil	Good

7. Remarks

NANOXID SC-OPTIC transparent coating is not a classical coating paint and some classic tests for organic coating are not relevant.
The performances indicated are averages and may vary in particular according to the type of support used. The data of the present technical data sheet are not contractual and may be amended in line with technological progress relating to the product.