DATA SHEET 1042
5 24.08.2018

INFRALIT EP 8021, 8022, 8025, 8026

Epoxy Powder

PAINT TYPE

INFRALIT EP 8021, 8022, 8025 and 8026 Epoxy Powders are coatings based on epoxy resins. At elevated temperatures the powders melt, cure and form the final paint film.

USAGE

They are used for product coatings within the metal industry, e.g. for lighting fixtures, apparatuses, furniture, shop outfitting, agricultural and household appliances. Also suitable for use on many special areas in the heavy metal and chemical industry.

SPECIAL PROPERTIES

The resultant paint film has excellent mechanical properties, i.e. good abrasion and impact resistance and elasticity. It is not scratched easily and withstands action by acids, alkalis, greases and solvents. Its anticorrosive properties are also good. On outdoor exposure the paint film has a tendency towards chalking. This phenomenon, however, affects only the appearance, not the protective power. An alternative material for outdoor use is INFRALIT Polyester Powder, which chalks only very little. It is not recommended that the metallic colours of epoxy powders are used in places where the painted surface is exposed to water or chemical strain.

TECHNICAL DATA

Spraying

The powders are suitable for corona charging and for tribo charging sprays. However the variants EP...-02 and EP...-09 are only suitable for tribo charging sprays.

Colours

By agreement.

Gloss grades

EP 8021 - Effect resembling sandpaper
EP 8022 - wavy structure
EP 8025 - gloss
EP 8026 - semigloss

Solids

100%

Specific gravity

abt. 1,3 - 1,7 kg/dm³ depending on colour

Spreading rate

4 - 15 m²/kg depending on the film thickness

Film thickness

One application gives a film thickness of 40 - 150 µm.

Curing time

10 min/180°C (metal temperature): EP 8021, EP 8022, EP 8025, EP 8026.
15 min/160°C (metal temperature): EP 8021-01, EP 8022-01, EP 8025-01, EP 8026-01
Variant EP 8026-10 has several different curing times and temperature combinations. The paint's shade and gloss depend greatly on the used parameters. The curing procedure for each product is shown on the label.

Melting point

abt. 100°C

Packages

15 kg or 20 kg according to the specific gravity of the powder.

Storage

In dry and cool conditions.

SAFETY PRECAUTIONS

The powder itself is non-flammable, but with air it can form an explosive mixture that in presence of adequate ignition energy ignites. The lower explosive limit for epoxy powder is about 60 g/m³ (Bundesanstalt für Materialprüfung). Ventilation of the spray booth should be adjusted so that the concentration of powder in the air is less than 50% of the lower explosive limit value. On calculation of the powder concentration in the spray booth, the powder deposited on the workpiece is not taken into account.
In order to avoid the discharge of powder from the booth into adjacent working spaces, the speed of air flow in the apertures of the booth must not fall below 0.5 m/s.
Spray painters should wear dust masks and protective gloves. Any spatter of powder on the skin should be washed off with water and soap.

PTO

DIRECTION FOR USE

Surface preparation

Remove all grease and dirt with care. Mere degreasing can be done e.g. by trichloroethylene vapour bath or alkali wash. Blast-clean or etch and phosphate rusty and mill-scaled surfaces.
The profile of the blast-cleaned surface must be at least rough. See standard ISO 8503-2.

COLD-ROLLED SURFACES: Degrease by thrichloroethylene vapour bath or alkali wash. Application by electrostatic spraying to a film thickness of 80 - 150 µm.

ALUMINIUM SURFACES: Degrease by e.g. alkali wash. Surfaces to be exposed to severe atmospheric conditions should also be chromated.

HOT-DIP-GALVANIZED AND ZINC-ELECTROPLATED SURFACES: Remove grease and white rust by e.g. alkali wash. Depending on exposure conditions, zinc phosphating or chromating is also required.

HOT-ROLLED SURFACES AND CASTINGS: Remove grease and dirt. Blast-clean at least to grade Sa 2½ (ISO 8501-1). The surface profile at least medium (G) ISO 8503-2 . Remove the dust.

Blast-cleaning is also recommended for other surfaces, such as cast iron, whenever it is practicable, since it provides an excellent adhesion for epoxy powder.

The following table gives the results of a salt spray test made with INFRALIT epoxy powder and illustrates the effect the substrate has on corrosion resistance.

FILM PROPERTIES

The following results have been obtained with EP 8026-00, curing 10 min/180°C, film thickness 80 µm.

Physical properties

Flexibility (Erichsen, ISO 1520)	7 mm
Impact resistance (Erichsen, SFS EN ISO 6272)	
- direct	70 kgcm
- reverse	40 kgcm
Pendulum hardness (König, SFS 3642)	180 s
Flexibility (SFS ISO 6860)	less than 5 mm
Adhesion (cross-cut test, EN ISO 2409)	GT 0

Corrosion resistance

The table below presents results of a salt spray test (ISO 7253) which compared the influence of different substrates on the corrosion resistance. The test time was 1100 h.

Substrate	Film thickness µm	Rusting degree	Detachment from the cut in mm
Chromated aluminium	75	Ri 0	No detachment
Cold-rolled steel	70	Ri ½	44
Zinc phosphated steel	80	Ri 0	1
Blast-cleaned steel	200	Ri 0	2
Hot-dip-galvanized steel	70	Ri 0	5

Jatkuu...

Chemical properties The following tests were carried out with metal rods coated with INFRALIT epoxy powder (grade P) and cured for 30 min/200°C. The film thickness was 150 - 200 µm.

\+ coating unaffected * coating swollen and uneven o coating destroyed
± coating softened - coating has become brittle

Immersion chemical	**1 mo.**	**6 mo.**	**1 a**	**2 a**
acetic acid 20%	+	+	+	+
acetic acid 10%	+	+	+	+
ammonium hydroxide 35%	+	+	+	+
ammonium hydroxide 10%	+	+	+	+
ammonium nitrate (saturated)	+	+	+	+
benzene	±	±	±	±
butanol	+	±	±	±
caprolactam 25%	+	+	+	+
caprolactam 10%	+	+	+	+
caprolactam 5%	+	+	+	+
chromic acid 20%	+	+	o	
chromic acid 10%	+	+	o	
citric acid 5%	+	+	+	+
copper sulphate 10%	+	+	+	+
ethanol 96%	+	+	+	+
ethanol (denatured with methyl ethyl ketone)	+	±	*	*
ethanol (denatured with methanol)	+	±	*	*
formaline 35% by volume	+	+	+	+
formic acid 10%	+	+	+	+
formic acid 5%	+	+	+	+
gasoline	+	±	±	±
hydraulic oil: vegetable oil (Skydrol 500 A)	+	*	o	
hydraulic oil: mineral oil (Rocol)	+	+	+	+
hydrochloric acid 20%	+	+	+	+
hydrochloric acid 10%	+	+	+	+
hydrogen peroxide 35%	+	o		
isopropanol	+	+	±	±
Javel water	+	+	o	
lactic acid 5%	+	+	+	+
linseed oil	+	+	+	+
nitric acid 20%	+	+	+	+
nitric acid 10%	+	+	+	+
oleic acid	+	+	+	+
paraffin, liquid	+	+	+	+
phosphoric acid 50%	+	+	+	+
phosphoric acid 20%	+	+	+	+
phosphoric acid 10%	+	+	+	+
potassium hydroxide 20%	+	+	+	+
potassium hydroxide 10%	+	+	+	+
salt solution 28 g/l	+	+	+	+
salt solution, saturated	+	+	+	+
sebacic acid (saturated)	+	+	+	+
sodium hydroxide 20%	+	+	+	+
sulphuric acid 50% by weight	+	+	+	+
sulphuric acid 28% by weight	+	+	+	+
sulphuric acid 10% by weight	+	+	+	+
tartaric acid 25%	+	+	+	+
Teepol	+	+	+	+
toluene	+	+	+	+
water, distilled	+	+	+	+
white spirit	+	+	+	+
xylene	+	+	+	±

EN_1042_Tuoteseloste.pdf