DATA SHEET 1077
8 17.12.2019

INFRALIT EP 8024-00, -21,-22, -23

Epoxy Powders

PAINT TYPE

INFRALIT EP 8024 is finely pulverized powder based on special epoxy resin and phenolic hardener. At elevated temperatures the powder melts, cures and form the final paint film.

USAGE

INFRALIT EP 8024 Epoxy Powder is used for demanding product coatings primarily within the heavy metal industry.

SPECIAL PROPERTIES

The resultant paint film has excellent mechanical properties, i.e. good abrasion and impact resistance and elasticity. The film does not get scratched easily, and It 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.

TECHNICAL DATA

Colours	By agreement.
Gloss grades	Gloss
Solids	100%
Specific gravity	Abt. 1,5 kg/dm³
Spreading rate	1,3 - 7,8 m²/kg depending on the film thickness
Film thickness	80 - 480 µm
Curing time	EP 8024-00: 10 min/180°C (metal temperature) EP 8024-21: 15 min/140°C (metal temperature) EP 8024-22: 30 min/130°C (metal temperature) EP 8024-23: 15 min/130°C (metal temperature)
Melting point	abt. 100°C
Packages	20 kg
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.

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DIRECTION FOR USE

Surface preparation and application

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

HOT-ROLLED SURFACES AND CASTINGS: Remove grease and dirt. Blast-clean at least to grade Sa 2½ (ISO 8501-1). The surface profile must be at least ISO 8503-2 medium (G). Remove the dust. The blast-cleaned workpieces may be preheated before application. Maximal temperature during preheating is +240°C, recommended surface temperature at application is +230°C. The recommended film thickness is 80 - 400 µm depending on the service conditions. If porosity measurements are made, they are to be done according to the recommendation (5 March 1985) of Suomen Korroosioyhdistys r.y. (Finnish Corrosion Society). Pores are to be repaired with e.g. two-pack epoxy paint.

FILM PROPERTIES

The following results have been obtained with a film that has been cured 10 min/+180°C, film thickness 80 µm:

Typical values

Impact resistance (ISO 6272)	
- direct	80 in.-lb
- reverse	80 in.-lb
Pendulum hardness (König, SFS 3642)	220 s
Flexibility (SFS ISO 6860)	less than 5 mm
Buchholz hardness (DIN 53153)	100
Abrasion resistance (Taber Abraser)	loss of mass 30 mg/1000 rotations
Adhesion (cross-cut test, EN ISO 2409)	GT 0
Adhesion (Sæberg adhesion tester)	20,6 N/mm²
- area of button 1,13 cm²	
- substrate: 10 mm thick panel blasted to Sa 2½	
- coating thickness about 200 µm	
Corrosion resistance (ISO 7253)	
- substrate: panel blasted to Sa 2½	
- duration of test 1000 h	
- coating thickness about 200 µm	
- detachment from the cut	5 mm
- blistering (ISO 4628-2)	-
Water absorption +20°C/2 months	1.1 %

Chemical resistance

+ no changes
- blisters in film
± film swollen/softened
// test ended

1) 10% by weight of concentrated acid, 90% by weight of distilled water
2) 50% by weight of concentrated acid, 50% by weight of distilled water
3) 40% by weight of 25% ammonia solution, 60% by weight of distilled water
4) 29% by weight of 35% hydrogen peroxide, 71% by weight of distilled water

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Table 1. CHEMICAL RESISTANCE OF INFRALIT POWDER EP 8024-00

		TEST PERIOD, WEEKS							
TEST SOLUTION	POWDER	1	2	3	4	6	10	13	18
phosphoric acid 10 % 1)	EP 8024-00	+	+	+	+	+	+	+	+
phosphoric acid 50 % 2)	EP 8024-00	+	+	+	+	+	+	+	+
sulphuric acid 10 % 1)	EP 8024-00	+	+	+	+	+	+	+	+
sulphuric acid 50 % 2)	EP 8024-00	+	+	+	+	+	+	+	+
hydrochloric acid 10 % 1)	EP 8024-00	+	+	+	+	+	+	+	+
hydrochloric acid 50 % 2)	EP 8024-00	+	+	+	+	+	+	+	+
nitric acid 10 % 1)	EP 8024-00	+	+	+	+	+	+	+	+
nitric acid 50 % 2)	EP 8024-00	+	+	+	+	+	+	+	+
ammonia 10 % 3)	EP 8024-00	+	+	+	+	+	+	+	+
ammonia 25 %	EP 8024-00	+	+	+	+	+	+	+	+
crystal carbonate 10 %	EP 8024-00	+	+	+	+	+	+	+	+
sodium hydroxide 10 %	EP 8024-00	+	+	+	+	+	+	+	+
calcium chloride 10 %	EP 8024-00	+	+	+	+	+	+	+	+
sodium chloride 10 %	EP 8024-00	+	+	+	+	+	+	+	+
distilled water	EP 8024-00	+	+	+	+	+	+	+	+
hydrogen peroxide 10 % 4)	EP 8024-00	+	+	+	+	+	+	+	+
hydrogen peroxide 35 %	EP 8024-00	+	+	+	+	+	+	+	+
acetic acid 10 % 1)	EP 8024-00	+	+	+	+	+	+	+	+
acetic acid 50 % 2)	EP 8024-00	+	+	+	+	+	+	+	+
alcohol TB	EP 8024-00	+	+	+	+	+	+	+	+
acetone	EP 8024-00	±	±	±	//				
ethyl acetate	EP 8024-00	±	±	±	±	±	±	±	±
xylene	EP 8024-00	+	+	+	+	+	+	+	+
White spirit	EP 8024-00	+	+	+	+	+	+	+	+

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