

## IcoTech Epoxy EX

Multipurpose Epoxy ink for Demanding Substrates

Issue No. 008/2019

**IcoTech Epoxy EX** is a two-pack screen printing ink with outstanding resistance to many chemicals and solvents with excellent adhesion to an extensive range of demanding materials, including Metals, Ceramics and many plastics.

### Mixing Information

**IcoTech Epoxy EX** inks are supplied in two parts (ink base and **EXGC** Gloss Catalyst or **EXMC** Matt Catalyst).

Before printing, estimate the amount of ink required for use during an 8 hour period. Mix ink and catalyst thoroughly before adding any thinner. Thoroughly mix the ink and catalyst together in the following ratios:

<b>Epoxy EX</b> Inks	80% by weight
EX Catalyst	20% by weight

<b>Epoxy EX381</b>	75% by weight
EX Catalyst	25% by weight

**Epoxy EX** Matt Catalyst is available to achieve finishes ranging from satin to matt by varying the **EXGC** (Gloss Catalyst) and **EXMC** (Matt Catalyst) ratios from:

100% <b>EXGC</b>	Gloss Finish
50% <b>EXGC</b> , 50% <b>EXMC</b>	Satin Finish
100% <b>EXMC</b>	Matt Finish

### Drying

**Epoxy EX** dries by combination of solvent evaporation, and a chemical reaction between the ink base and catalyst.

Air drying times are as fast as 30mins using **EX-FTH** Fast Thinner or as slow as 5 hours using **EX-TH** Thinner, depending on ink film deposit.

**At room temperature, full chemical resistance and adhesion are not fully developed until about four days after printing.**

Adhesion will be improved and drying time reduced considerably when **Epoxy EX** is dried at elevated temperatures. The following tables can be used as a guide:

#### Air Dry

<b>Thinned With:</b>	<b>Air Dry Time:</b>
<b>EXFTH</b> Fast Thinner	1/2 to 1 hour
<b>EXTH</b> Thinner	5 hours

#### Convection Oven

<b>Temperature:</b>	<b>Drying Time:</b>
150 °C	5 to 8 minutes
120 °C	10 to 15 minutes
80 °C	20 to 30 minutes

### Main Characteristics

#### Properties

- Exceptional Resistance to Heat, Chemicals and Solvents
- Formulated Lead-free
- Choice of Finish Between Gloss, Satin or Matt
- Excellent Adhesion range on multiple substrates
- Resistant to Mirror Silvering Processes
- Recommended for Pad Printing use
- May be air dried or force dried

#### Curing

30 minutes to 5 hours (See Drying section)

#### Thinning

5-10% **EXTH**

For faster drying, use 5-10% **EXFTH**

#### Wash-up

Wash up with **ZTC639**

#### Mesh

Monofilament 68-120 threads/cm<sup>2</sup>

#### Stencil Type

Most direct stencil materials are suitable.

#### Recommended:

Emulsion: **Dirasol 22**, **Dirasol 32** and **Dirasol 915**

#### Coverage & Mesh No.

40-50M<sup>2</sup> using a 90:48PW mesh

#### Applications

Aluminium, Brass, Copper, Tin, Steel and other metals

Polyethylene, Polypropylene and other plastics

Glass, vitreous and stoved Enamel Surfaces

Silvering resistant prints used in mirror production

**Epoxy EX** inks are highly suitable for use on printed circuit boards which meet BS6096 standard

**Epoxy EX** inks can also be used in laminating processes, due to their heat resistance

#### Colour Range

12 Line Colours

4 Colour Process set

#### Chemical and Solder/Heat Resistance

When inks are fully cured, they possess excellent resistance to most commonly used chemicals including - Acids, Alkalis, Solvents, Grease and other lubricants, Cosmetics, Detergents and other household products.

#### IMPORTANT:

**Stir mixed ink well before every use. Always test the adhesion of cured Epoxy EX before commencing full production, due to variation in printing substrates from batch to batch.**

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### Printing and Wash up

Stencil must be solvent resistant.  
Graphic emulsions are recommended:  
Diazo Dual Cure Graphic Emulsion – **Dirasol 915**  
Diazo Graphic Emulsion – **Dirasol 22**  
After printing, inks can be cleaned easily from the mesh using Multipurpose screen cleaner **ZTC639**.

### Adhesion

**Epoxy EX** inks possess excellent adhesion over a wide range of difficult metal, ceramic, and plastic surfaces, including: Metals: Aluminum, copper, brass, tin, steel, and most of their alloys. Ceramics, glass, enamel, Formica, flame treated polyethylene, and polypropylene, and certain grades of polyester films.

**Epoxy EX** also has excellent adhesion to most baked enamel surfaces and can also overcome the ink repelling effects of silicones and waxes, found in baked enamels.

### Colour Range

#### Line Colours

<b>EX001</b>	Black
<b>EX021</b>	White
<b>EX064</b>	Yellow (GS)
<b>EX066</b>	Yellow (RS)
<b>EX114</b>	Orange
<b>EX127</b>	Violet
<b>EX165</b>	Magenta
<b>EX164</b>	Red (BS)
<b>EX191</b>	Red (YS)
<b>EX230</b>	Blue GS
<b>EX325</b>	Green
<b>EX381</b>	Extender Base

#### Four Colour Process Inks

<b>EX004</b>	Trichromatic Black
<b>EX052</b>	Trichromatic Yellow
<b>EX135</b>	Trichromatic Magenta
<b>EX215</b>	Trichromatic Cyan

### Catalysts

<b>EXGC</b>	Gloss Catalyst
<b>EXSC</b>	Satin Catalyst
<b>EXMC</b>	Matt Catalyst

### Safety and Handling

#### Epoxy EX:

- Is formulated free from any (toxic) carcinogenic, mutagenic or reprotoxic chemicals.
- Is formulated free from lead and is tested to comply with the RoHS (2011/65/EU) standard
- Contains Barium and should not be used on objects liable to be sucked or chewed by children.
- All products should be stored at moderate temperatures, between 5°C and 30°C. Storage outside of these temperatures may lead to deterioration in the performance of the product.

Comprehensive information on the safety and handling of **Epoxy EX** screen inks and solvents is given in the appropriate **ICONINKS** Safety Data Sheet.

### Environmental Information

#### IcoTech Epoxy EX

- Do not contain ozone depleting chemicals as described in the Montreal Convention.
- Are formulated free from aromatic hydrocarbons.
- The **IcoTech Epoxy EX** range has been developed not to contain phthalates restricted for use by Council Directive 2005/84/EC

#### Epoxy EX Catalysts

- Do not contain ozone depleting chemicals as described in the Montreal Convention.

The information and recommendations contained in this Product Information sheet, as well as technical advice otherwise given by representatives of our Company, whether verbally or in writing, are based on our present knowledge and believed to be accurate. However, no guarantee regarding their accuracy is given as we cannot cover or anticipate every possible application of our products and because manufacturing methods, printing stocks and other materials vary. For the same reason our products are sold without warranty and on condition that users shall make their own tests to satisfy themselves that they will meet fully their particular requirements. Our policy of continuous product improvement might make some of the information contained in this Product Information sheet out of date and users are requested to ensure that they follow current recommendations.

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