

Dirasol Diazo Photopolymer Emulsions

Multi-purpose: 902 – 915 – SuperCoat – 916 – 917 – Zenith

Speciality: SuperPro – 948 – SuperTex – Enduro

PRODUCT INFORMATION

The combination of diazo and photopolymer chemistry creates photostencil systems capable of the highest standards of printing for all applications and ink systems.

Multi-purpose Dirasol Emulsions	902	915	SuperCoat	916	917	Zenith
Ink Resistance	SB, CUV, P	SB, WB, CUV, WUV, P	SB, WB, CUV, WUV, P	SB, WB, CUV, WUV, P	SB, CUV, P	SB, WB, CUV, WUV, P
Colour	Violet	Deep Blue	Deep Blue	Deep Blue	Deep Blue	Violet
Solids Content (sensitised)	40%	38%	38%	40%	42%	37%
Sensitised Viscosity @ 25°C (mPas)	7,000	4,500	4,500	4,500	5,000	5,000
Stencil Build in microns*	4	4	4	4	4	4
Definition	8	8	8	9	9	9
Resolution	7	9	9	9	9	9
Ease of washout	8	9	9	8	9	10
Ease of decoating	8	10	10	7	8	10
Approx sensitised emulsion life (22°C)	4 weeks	4 weeks	4 weeks	4 weeks	4 weeks	4 weeks
Approx coated screen life (22°C)	4 weeks	4 weeks	4 weeks	4 weeks	4 weeks	4 weeks
Typical through-cure exposure speed (5kw metal halide lamp at 120cm)*	85 light units	100 light units	100 light units	80 light units	75 light units	70 light units

*Based on: 1+2 automatic coating on 150.34 plain weave dyed mesh.

Key: SB = Solvent-based, WB = Water-based, CUV = Conventional UV, WUV = Water-based UV, P = Plastisol
10 = Superb, 5 = Good, 0 = Poor

Dirasol 902

Produces stencils with exceptional definition for graphic and industrial printing. Wide exposure latitude and easy decoatability.

Dirasol 915

Resistant to all graphic, speciality and textile inks. Formulated to overcome static problems in high humidity conditions.

Dirasol SuperCoat

Superb coating characteristics and resistant to all ink types. Formulated to overcome static problems in high humidity conditions.

Dirasol 916

Universal graphic emulsion offering superb resolution and definition. Highly resistant to water-based UV graphic ink systems.

Dirasol 917

Specifically designed for high quality printing using UV and solvent-based inks. Particularly suitable for production of wet-on-dry or face-coated stencils.

Dirasol Zenith

Specifically designed for high quality printing using UV and solvent-based inks. Fast, reliable processing including rapid development and easy decoating properties.

Speciality Dirasol Emulsions	SuperPro	948	SuperTex	Enduro
Ink Resistance	SB,WB,CUV, WUV,P	SB,CUV,P	P,WBT	SB,WB,CUV, P,WBT
Colour	Violet	Light Blue	Blue	Pale Blue
Solids Content (sensitised)	40%	48%	41%	46%
Sensitised Viscosity @ 25°C (mPas)	5,500	9,000	6,000	5,500
Stencil Build in microns	4 **	30 ++	20 ++	12 ++
Definition	9	9	8	9
Resolution	9	6	8	7
Ease of washout	8	7	8	7
Ease of decoating	7	7	8	7
Approx sensitised emulsion life (22°C)	4 weeks	4 weeks	4 weeks	2 weeks
Approx coated screen life (22°C)	4 weeks	2 weeks	4 weeks	3 days
Typical through-cure exposure speed (5kw metal halide lamp at 120cm)**	70 light units (conventional exposure)**	125 light units ++	200 light units ++	180 light units ++

** 1+2 coats on 150.34 plain weave dyed mesh, ++ 2+2 coats on 62.64 plain weave white mesh, ++ 2+2 coats on 43.80 plain weave white mesh

Key: SB = Solvent-based, WB = Water-based, CUV = Conventional UV, WUV = Water-based UV,
P = Plastisol, WBT = Water-based textile
10 = Superb, 5 = Good, 0 = Poor

Dirasol SuperPro

Fast exposing, high quality emulsion designed for use with direct projection cameras (see 'Dirasol Direct Projection Emulsions' product information sheet for more information).

Dirasol 948

High solids content and viscosity for the easy production of high-build stencils for applications which require heavy ink deposits.

Dirasol SuperTex

For the production of high quality, durable stencils for garment printers.

Dirasol Enduro

Developed to have extreme mechanical and chemical resistance, particularly the aggressive frit pastes used in ceramic and glass printing.

Instructions for Use

Safelighting

Handling of Dirasol emulsions should be carried out in light which is low in blue and ultra-violet content. Gold fluorescent light tubes are recommended and daylight

should be excluded or filtered by a yellow lacquer coating or film applied over windows.

Sensitising

Dirasol diazo photopolymer emulsions are supplied as two-pack systems consisting of:

Part A – liquid emulsion, Part B – diazo sensitiser

which should be mixed as follows:

1. Add water to the shoulder of the sensitiser bottle (about 80% full) and shake until the sensitiser is fully dissolved.
2. Add the sensitiser solution to the emulsion and thoroughly stir with a plastic or wooden stirring stick. Leave to de-gas for a minimum of one hour before use.

If stored at room temperature, the sensitised emulsion should be used within the sensitised life quoted in the above tables.

Preparing the Screen

In automatic machines:

Use Xtend Prep 300 diluted with up to 5 parts of water.

By hand:

Wet the screen and brush Xtend Prep 102 onto both sides of the screen with a light circular motion. Leave to stand for 60 seconds, then rinse thoroughly with cold water. Allow mesh to dry before coating.

Coating

Automatic Coating:

Apply a simultaneous single coat on each side of the screen. A second simultaneous coat, or a second coat to the squeegee side only may be necessary if a high build is required. Additional single coats should always be applied to the squeegee side to ensure emulsion builds on the print side of the screen.

Hand coating:

Apply one coat to the print side of the screen, followed by additional coats, wet-on-wet to the squeegee side. The Fujifilm Coating Trough is particularly recommended.

Fujifilm Coating Troughs

The troughs are composed of precision extruded aluminium channelling fitted with injection moulded end pieces for accurate and consistent coating of photostencil emulsions. The channelling has a hard anodised finish which effectively seals the surface, easing cleaning and protecting from corrosion. The ends have a special shoulder and slots incorporated, ensuring the coating edge is consistently at the optimum angle to the screen helping eliminate beads.

These features permit relatively inexperienced operators to coat screens faster and more accurately. Designed to deposit medium coating thicknesses, it is possible to coat a screen to a given stencil thickness with fewer strokes than would be required with a sharper or less precise edge. The amount of emulsion used to coat a given area of screen is principally governed by the fineness of the mesh. Fujifilm coating troughs hold sufficient to cover approximately 1.5-2m in a single stroke.

Drying

Dry the screen in a horizontal position, squeegee side up in darkness or subdued yellow light. A warm air fan or heated cupboard (up to 40°C) may be used but care should be taken not to blow dust on to the drying screen. Avoid humidity levels above 60% or below 20%. For maximum stencil durability, screens must be thoroughly dried before exposure. Dried Dirasol screens may be stored in the dark at cool room temperatures for not longer than the times quoted in the tables above.

Exposure

Correct exposure time is most important to obtain optimum definition/resolution and stencil life. The use of an exposure calculator is recommended with an unfamiliar emulsion, with a new light source, or replacement bulb. Exposure times should be verified with a calculator on a regular basis, even if no changes have been made to any processing parameter. This

will ensure that exposure times remain correct even if lamp output has deteriorated with use.

Position the film positive, emulsion side in contact with the print side of the emulsion coating, and secure with clear tape. Place the screen into the vacuum print-down frame and ensure perfect contact with the glass before exposing.

Refer to the chart below for suggested exposure times. These may vary depending on the emulsion coating thickness, colour of mesh dye, transparency of the film positive, equipment type, bulb age, and other variables in workshop conditions. All values (Light Units) are based on a lamp distance of 120cm.

Dirasol	Metal Halide	
	1000W	5000W
902*	360-440	70-90
915*	500-530	90-115
SuperCoat*	500-530	90-115
916*	350-400	65-85
917*	330-380	60-80
Zenith*	320-370	55-75
SuperPro*	320-370	55-75
948+	580-660	115-135
SuperTex#	1000-1070	180-220
Enduro+	850-940	170-190

* 150.34 dyed plain weave, coated 1+2

+ 62.64 white plain weave, coated 2+2

43.80 white plain weave, coated 2+2

Developing

Gently spray both sides of the screen with cold or warm water. Continue washout from print side, using increased water pressure after one minute, if necessary. Continue developing until all parts of the image appear clean and sharp. Screens with a thick emulsion coating can benefit from being left to stand wet for a few minutes prior to washout. Dry the screen completely in a drying cabinet or with the aid of a warm air fan.

Spotting and Masking Out

Spotting out with a brush using Xtend Green or Red Filler can fill in any small blemishes or pinholes in the stencil. The same fillers are recommended for blocking out between the edges of the stencil and the frame.

Reclaiming the Screen

Automatic Screen Cleaning Machines:

Use an Xtend Screen Cleaner to remove ink residues, and diluted Xtend Strip Liquid Concentrates to decoat the stencil.

Manual Screen Cleaning:

Remove ink residues using a wipe soaked with an Xtend Screen Cleaner. Rinse the screen with water, and apply diluted Strip Powder or Strip Liquid to both

sides of the stencil. Leave for a minute then remove the stencil with high-pressure water.

Standard Packing

Dirasol	Double Pack 9 (2x4.5) litres	Mini Jumbo 5.4 (6x0.9) litres
902	DLD52/9	DLD52/5,4
915	DMM14/9	DMM14/5,4
SuperCoat	DMA07/9	–
916	DM916/9	DM916/5,4
917	DM917/9	DM917/5,4
Zenith	EPZEN/9	EPZEN/5,4
SuperPro	DCPRO/9	–
948	DND58/9	DND58/5,4
SuperTex	DOTEX/9	DOTEX/5,4
Enduro	EADUR/9	–

Storage

Unsensitised Dirasol should be stored in as cool a temperature as possible, but not below 2°C or above 35°C. Sensitised Dirasol should be stored under similar conditions, in its original container with the lid sealed. The product will remain stable at 22°C for up to the period stated in the tables above, but keeping it in a household type refrigerator can extend this. The pot life will be significantly reduced as the temperature increases above 22°C.

Fujifilm Speciality Ink Systems Limited:

- Has certification to the International Environmental Standard, ISO 14001.
- Has certification to the Quality Management Standard, ISO 9001.
- Has certification to the Occupational Health and Safety Standard, ISO 18001.
- Is committed to minimising the risk to users of our products, and also to minimising the impact of our activities on the environment, from formulation through to production and supply.

- Research and development team, work to an in house Health Safety and Environmental policy, termed 'Design for Health, Safety and Environment', with the aim of proactively developing products with the least impact on health, safety and the environment.
- Regularly review and monitor our impacts and activities, setting objectives and targets as part of a continual improvement process.
- Is committed to reducing waste through better use of raw materials, energy, water, re-use and recycling.

Safety and Handling

Dirasol Diazo Photopolymer Emulsions:

- Are formulated to be free from any chemicals toxic to health, carcinogenic, mutagenic or reprotoxic according to Directive 67/548/EC.
- Have a flashpoint greater than 55°C and are therefore not classified as "dangerous substance" under the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR).

Comprehensive information on the safety and handling of Dirasol emulsions and diazo sensitiser is given in the appropriate Safety Data Sheets.

Environmental Information

Dirasol Diazo Photopolymer Emulsions:

- Do not contain ozone-depleting chemicals as described in the Montreal Convention.
- Are formulated free from aromatic hydrocarbons.
- Are free from any volatile solvent and can therefore be considered to have less impact on the environment when compared to solvent-based products.
- Are free from phthalate plasticisers.
- Have a pH of 4-5.

The information and recommendations contained in this Product Information sheet, as well as technical advice otherwise given by representatives of Fujifilm Speciality Ink Systems Limited and its associated companies, 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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