



## Dirasol Diazo Emulsions

**RAPID - 22 - 29 - 32 - 25 - T**

Dirasol Rapid, 22, 29 and 32 are formulated for use with solvent-based and UV curing inks in graphic and speciality screen printing. Dirasol 25 is specially formulated for printers of T-shirts, sports and fashion wear, using water-based or plastisol inks. Dirasol T is for the textile reel to reel flatbed printer with either automatic machines or tables.

Main Characteristics						
Dirasol >	Dirasol Rapid	Dirasol 22	Dirasol 29	Dirasol 32	Dirasol 25	Dirasol T
<b>Stencil Type</b>	Light Blue, 2 pack diazo direct emulsion	Violet, 2 pack diazo direct emulsion	Light Violet, 2 pack diazo direct emulsion	Violet, 2 pack diazo direct emulsion	Light Violet, 2 pack diazo direct emulsion	Blue, 2 pack diazo direct emulsion
<b>Ink Resistance</b>	Solvent-based, conventional UV	Solvent-based, conventional UV	Solvent-based, conventional UV	Solvent-based, conventional UV	Plastisol, water based	With Sericure, all water based dye and pigment systems
<b>Recommended Applications</b>	Graphic and Speciality printing	Graphic and Speciality printing	Graphic and Speciality printing	Graphic especially fine line & half tone	Textile printing: T-Shirts, sports & fashion wear	Web textile printing
<b>Definition</b>	Good	Good	Good	Good	Good	Good
<b>Resolution</b>	Good	Good	Good	Excellent	Good	Good
<b>Decoatability</b>	Good	Good	Excellent	Good	Fair	Good, prior to hardening
<b>Solids Content (Sensitised)</b>	29%	27%	33%	29%	38%	33%
<b>Dry Coating Weight</b>	25g/m <sup>2*</sup>	24g/m <sup>2*</sup>	28g/m <sup>2*</sup>	25g/m <sup>2*</sup>	67g/m <sup>2†</sup>	53g/m <sup>2†</sup>
<b>Stencil Build in microns</b>	6*	6*	7*	6*	21†	18†
<b>Sensitised Viscosity at 25° (mPas)</b>	6,000	5,500	7,500	7,000	5,500	3,500
<b>Approx. Life Sensitised (22°)</b>	2 months	3 months	3 months	3 months	3 months	1 month
<b>Approx. Life Coated Screen (22°C)</b>	3 months	3 months	3 months	3 months	3 months	1 week

\* 2+2 coats 120.40 mesh    †2+2 coats 62.64 mesh

### Properties

#### Emulsions for graphic & Speciality Printing

##### Dirasol Rapid

One of the fastest exposing diazo emulsions available.

- Ultra-fast exposure
- Excellent mechanical resistance.

##### Dirasol 22

The all-round emulsion with a wide exposure latitude and excellent resolution.

- Wide exposure latitude
- Excellent solvent resistance.

##### Dirasol 29

The easiest diazo emulsion to decoat.

- Extremely easy decoating
- Excellent mesh bridging.

##### Dirasol 32

The emulsion for ultra-fine line and halftone reproduction.

- Excellent resolution.

#### Emulsion for Garment Printing

##### Dirasol 25

A reclaimable emulsion for fabric printing using plastisols or water-based inks, adhesives and pastes. Not resistant to a water/solvent mix.

- Excellent mesh bridging
- Good see-through for easy registration/setting up.
- Can be water proofed with Sericure.

#### Emulsion for Web Textile Printing

##### Dirasol T

Once treated with Sericure is impervious to all water-based dye and pigment systems found in textile printing.

- Solvent free/low odour
- Extremely long print runs without requirement of over-lacquering
- Easily reclaimed prior to Sericure treatment.

# Dirasol Diazo Emulsions

## Instructions for Use

### Safe Lighting

All handling of Dirasol emulsions should be carried out in light of low blue and ultra-violet content. A photographic safelight is not essential, but it is advisable to use yellow or weak tungsten illumination.

A useful form of light for the workroom is provided by gold fluorescent tubes and daylight should be excluded or filtered by a yellow lacquer coating or film applied over windows.

### Sensitising

Dirasol diazo emulsions are supplied as a two pack system consisting of:

1. Coloured Emulsion
2. Diazo Sensitiser

which should be mixed as follows:

- i) Part fill the sensitiser bottle with water to not less than 80% of its total capacity and shake it until the sensitiser is fully dissolved.
- ii) Add the sensitiser solution to the emulsion and thoroughly stir in with a plastic or wooden stirring stick. Ideally the emulsion should be allowed to de-gas for one hour before use.

### Preparing the Screen

Degrease the mesh in automatic screen cleaning machines using Xtend Prep 300 Sprayable Degreasing Concentrate or by hand with Prep 102 Degreasing and Emulsifying Concentrate. When degreasing by hand using Prep 102 wet the screen and apply with a sponge or brush and then rub the mesh with a light circular motion. Ensure that both sides of the screen are thoroughly treated. Leave to stand for a few minutes and rinse with cold water to remove all traces of Prep. The mesh must be dry before coating with emulsion.

### Coating Troughs

Fujifilm Coating Troughs have been designed for the accurate and consistent coating of direct photostencil emulsions. The troughs are composed of precision extruded aluminium channelling fitted with injection moulded end pieces. The aluminium channelling of the troughs has a hard anodised finish which effectively seals the surface. This feature makes the troughs easier to clean and also protects them from corrosion. The end pieces have a special shoulder which ensures that the coating edge is consistently at the optimum angle in relation to the screen. To help eliminate the beads formed at the extremities of conventional troughs, special slots have been incorporated into the end pieces. These features permit even relatively inexperienced operators to coat screens faster and more consistently. Fujifilm Coating Troughs are designed to deposit medium coating thicknesses. It is therefore possible to coat a screen up to a given stencil thickness with fewer strokes than would be required with a sharper or less precise edge.

### Automatic Coating

When using an automatic coating machine, apply a simultaneous single coat to each side of the screen, followed by a second coat to the squeegee side. If a higher build is required, extra coats should be applied to the squeegee side of the screen.

### Hand Coating

#### Dirasol Rapid, 22, 29, 32 and 25

Stand the screen on edge slightly inclined away from the operator and process the screen as follows:

Apply one or two coats, wet on wet, on the print side of the screen and then apply extra coats on the squeegee side of the screen depending on the stencil build required.

### Dirasol T

Stand the screen on edge, slightly inclined away from the operator, and process the screen as follows:

1. Apply one or more coats wet on wet on the print side of the screen to fill the mesh, the thickness of the finished stencil being controlled by the mesh grade.
2. A scrape coat to improve cosmetic appearance may be applied on the squeegee side.

Coating from both sides is neither necessary nor desirable as this can entrap air bubbles, giving rise to weak spots. This is especially likely with monofilament meshes coarser than 43.80.

### Drying

Dry the screen in a horizontal position, squeegee side up, in darkness or subdued yellow light. A warm air fan or well ventilated heated cupboard (up to 40°C) may be used but care should be taken not to blow dust on to the drying screen. Dirasol screens may be stored in the dark at cool temperatures prior to exposure. See paragraph 'Storage' for recommended maximum period.

### Exposure

Correct exposure is most important to obtain optimum resolution, definition and stencil life. To establish this, with an unfamiliar emulsion or light source, the use of an exposure test scale is recommended.

This can be done by:

1. Using an exposure calculator.
2. Placing a fine detail positive film over a coated screen and giving it a series of stepped exposures using a black paper mask.

The exposure time is usually doubled from one step to the next. The correct exposure is the longest exposure that can be given whilst still obtaining optimum stencil resolution and definition after wash out. Over-exposed areas would result in loss of detail, whilst under-exposed areas may result in weak, thin stencils.

Position the positive, emulsion side in contact with the Dirasol coating, on the underside of the dry screen, securing with tape. Then place the complete screen into the vacuum print down frame and ensure perfect contact before exposing to light. The length of exposure time depends on the light source, the thickness of the Dirasol coating, the fineness and colour of the mesh, and the transparency of the background of the positive. The following guide can be the basis of an initial test exposure.

### Exposure Guide (seconds)

Dirasol	22	25	Rapid	29	32	T
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#### 50 Amp Open Carbon Arc at 120cm

1330-1420	665-810	720-840	1080-1200	1500-1800	450-510
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#### HPR 125W Mercury Vapour Lamp at 50cm

740-860	370-430	360-440	630-730	830-970	230-285
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#### Metal Halide Lamps at 120cm

1000W	740-860	370-430	360-440	630-730	830-970	230-285
2000W	360-440	180-220	180-220	310-370	410-490	115-145
3000W	240-300	120-150	110-150	210-250	270-330	70-90
5000W	140-180	70-90	70-90	120-160	160-200	45-55
6000W	110-150	55-75	60-80	90-130	130-170	50-70

# Dirasol Diazo Emulsions

The exposure values quoted are the times required to fully cure and therefore completely harden the sensitised emulsion on a 120.40 dyed (62.64 white for Dirasols 25 and T) monofilament screen, with a 2+2 coating (see also Dirasol T technique). Using these through-cure exposure values prevents emulsion being washed away during development and ensures stencils of optimum resolution, definition, durability and decoatability. Stainless steel, dyed fabrics and multi-coat stencils require longer exposure.

## Developing

Place the screen in a sink or automatic developing machine and gently spray both sides with cold or warm water (not above 40°C). After 1-2 minutes the spray pressure can be increased slightly. Continue developing until all parts of the image appear clean and sharp. Immediately after developing, remove surface moisture with a screen vacuum or by gently mopping both sides of the screen (which should be in a horizontal position) with a soft moist chamois leather. This will speed final drying and also remove any impurities that might cling to the open areas of the screen.

## Final Drying and Spotting Out

Dry the stencil with the aid of a warm air fan. Any small blemishes or pinholes, usually caused by dust specks or spots on the positive, can be filled in by spotting out with a brush containing screen filler or sensitised Dirasol emulsion. After spotting out, the screen is ready for printing. **Dirasols 25 and T should be re-exposed when used as a spot out with resistance to water-based inks.**

## Waterproofing Dirasol Stencils

(See Product Information Sheet on Xtend Screen Fillers and Stencil Treatment)

### Sericure (SCK81)

Sericure is a solution which can be used to produce water resistant stencils. Sericure is suitable for use with all Dirasol stencils on polyester and stainless steel mesh. Stencils treated with Sericure are more difficult to reclaim.

### Instructions for use

1. Apply Sericure to both sides of the stencil using a soft brush or sponge.
2. For maximum stencil durability allow treated stencil to stand overnight, or leave to stand at room temperature for one hour and then place in front of hot fans (above 40°C) for a further hour.

## Reclaiming the Screen

In automatic screen cleaning machines, remove ink residues using an Xtend Screen Cleaner and decoat stencil using diluted Xtend Strip Liquid Concentrate. When removing by hand, remove all traces of ink with a rag soaked in Xtend Screen Cleaner. Rinse the screen with water and then apply diluted Xtend Strip to both sides of the stencil. Leave for a few minutes. The stencil can then be easily removed with a strong water jet or high pressure water gun.

## Standard packing

Double Pack 9 (2 x 4.5) litre emulsion.

DVL47 Dirasol Rapid  
SZK96 Dirasol 22  
DTT34 Dirasol 29  
DGU15 Dirasol 32  
DYL33 Dirasol 25  
DWU51 Dirasol T

Mini-Jumbo Pack - Emulsion and Diazo Sensitiser to make 5.4 (6 x 0.9) litres.

DVL47 Dirasol Rapid  
SZK96 Dirasol 22  
DTT34 Dirasol 29  
DGU15 Dirasol 32  
DYL33 Dirasol 25  
DWU51 Dirasol T

## Storage

Unsensitised Dirasol should be stored in as cool a temperature as possible, but not below 5°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 3 months, but this can be extended by keeping in a household type refrigerator. The storage time will be significantly reduced as the temperature increases above 22°C.

### Storage Limits of Sensitised Dirasol (months)

Dirasol	22/25/29/32	Rapid	T
20°C - 25°C	3	2	1
In Household Refrigerator	6	4	2

## Safety and Handling

Dirasol Emulsions:

- Are formulated to be free from any chemicals toxic to health, carcinogenic, mutagenic or reprotoxic according to Directive 67/548/EC
- has a flashpoint greater than 55°C and is therefore not classified as a "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.

## Fujifilm Speciality Ink Systems Limited:

- Has certification to the International Environmental Standard, ISO 14001.
- 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 & 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.

