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BASF SE

# Rongalit® Discharge ST Lq.

**Discharge agent for pigment discharge reducing agent for direct printing with  
vat dyes**

<b>Chemical nature</b>	Sulphinic acid derivative in water
<b>Physical form</b>	Colorless liquid
<b>Storage</b>	24 months
<b>Shelf life</b>	Rongalit® Discharge ST Lq. can be kept in the original sealed containers at temperatures between 10°C and 30°C for at least 24 months. Once containers have been opened, the contents should be used up quickly. Containers should be closed tightly after use.

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## Properties

<b>Density (20 °C)</b>	Approx 1.33 g/cm <sup>3</sup>
<b>Boiling point</b>	Approx. 104 °C
<b>Setting point</b>	Approx. + 5 °C
<b>pH</b>	10 –11 (undiluted)
<b>Solubility in water</b>	Unlimited  The above figures are approximate. Tolerances are given in the product specification.  Rongalit® Discharge ST Lq. has excellent stability both in the print pastes themselves and in the dried prints before steaming  Rongalit® Discharge ST Lq. is stable to alkalis but very sensitive to acids, the latter destroy the product  At temperatures above 120 °C Rongalit® Discharge ST Lq. decomposes with evolution of gases

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## Application

### 1. Pigment discharges

Rongalit® Discharge ST Lq. is an environmentally friendly, zinc-free reducing agent and is ideal as a discharge agent in solvent-free pigment discharge printing on discharge grounds dyed with reactive or direct dyes.

Rongalit® Discharge ST Lq. is used in this case together with synthetic thickeners (e. g. Lutexal® grades)

The product can, however, also be used for high-solvent pigment discharges. It is well-known that in discharge printing the life of the rotary printing cylinder can be considerably shorter than in the corresponding direct printing methods.

This also applies to pigment discharge printing as opposed to direct pigment printing. Even in solvent-free pigment discharge printing, in rare cases there can be increased abrasion of the printing cylinders. This abrasion can result in a reduced service life of the printing cylinders.

Any streaks appearing in the printed articles can be removed by oxidation treatment in washing off the prints.

Detailed information on this is given in Technical Information "Discharge printing with Helizarin® pigments" – TI/T 103

Although these streaks occur only sporadically, thorough preliminary

trials should always be carried out.

To produce reactive-dyed discharge grounds, reactive dyes of the vinyl sulphone type which are dischargeable to white

#### **Guideline recipe**

#### **Stock discharge paste for cotton (high quality requirements, simple recipe formulation)**

... g	water
0.5 – 3 g	Helizarien Anti Foam TC ECO if required,
80 – 100 g	Rongalit® Discharge ST Lq. stir in one
approx 80 g	Lutexal® Thickener HIT after the other
25 g	Luprintol® Multifunction MCL (high-speed stirrer)
130 – 180 g	Helizarin® Binder ET (or TOW)
2 g	triethanolamine
20 g	Diammonium phosphate 1 : 3
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	1000 g

Viscosity: approx. 50 dPa · s (measured with Visco tester VT 02 made by Haake Mess-Technik GmbH u. Co., Karlsruhe). The required amount of Rongalit® Discharge ST Lq. is governed by the substrate and ground shade and must be determined in each case by preliminary trials.

The products are stirred into the water with a high-speed stirrer in the sequence given. After the addition of Lutexal® Thickner HIT the batch is stirred thoroughly until the thickener has swollen completely. The other auxiliaries are then added in order and the ready-to-use discharge stock paste is homogenized for 8 – 10 minutes. The pH of the pastes should be 8.

#### **Coloured discharges**

... g	Helizarin® pigment
... g	discharge stock paste
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	1000 g

The Helizarin® pigments are best added to stock paste containing reducing agents just before printing is commenced.

#### **White discharges**

50 – 200 g	Helizarin® White RTU or RTN
... g	discharge stock paste
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	1000 g

After printing, the fabric is dried. The discharge action of Rongalit® Discharge ST Lq. declines noticeably at temperatures above 120 °C. The temperature on the fabric should therefore not exceed 110 °C.

The fabric is then steamed (6 – 10 minutes at 102 °C with saturated steam, air-free) and cured (5 minutes at 150 °C with hot air). Finally the prints are rinsed in cold water, treated at 40 – 60 °C with 2 ml/l peroxide, then soaped at 60 – 70 °C with 1 g/l Kieralon® Wash Jet B

Conc., rinsed again in cold water and dried.

Fabric printed with Rongalit® Discharge ST Lq. and then thoroughly dried should be left no longer than 2 days before being steamed.

The printed and dried fabric must be protected from moisture because this in combination with accumulated heat causes decomposition of the reducing agent, thus adversely affecting the discharge effect.

Steaming with saturated steam in an air-free steamer is necessary for the reductive destruction of the ground dyes, and curing with hot air is crucial to achieving a good fastness level. Fixation with superheated steam is not suitable for discharge prints produced with Rongalit® Discharge ST Lq.

## 2. Direct printing with vat dyes

The use of Rongalit® Discharge ST Lq. in direct printing with vat dyes is very simple and corresponds largely to that of Rongalit® Discharge C. Prints produced with this dye therefore have excellent brilliance.

In preparing a stock paste, potash or soda and then Rongalit® Discharge ST Lq. are added to the thickener cooled to at least 60 °C. The following recipe should be taken as a guide for preparing a print paste:

Guideline recipe approx.

600 g	thickener
100 g	potash
50 g	Glycerol
200 g	Rongalit® Discharge ST Lq.
... g	make up to 1000 g

The advantage of Rongalit® Discharge ST Lq. compared with Rongalit® Discharge C in printing with vat dyes lies in the fact that the printed fabric does not necessarily have to be steamed in the first 2 – 6 hours after printing and drying. The good stability of prints produced with Rongalit® Discharge ST Lq. enables dye fixation to be postponed. Should it be necessary for operational reasons, fixation can even be carried out after 1 – 2 days. The required steaming times are roughly 1.5 times as long as those for printing with Rongalit® Discharge C. Therefore the use of Rongalit® Discharge ST Lq. depends essentially on the available steamer capacity. After steaming, the fabric is finished in the usual manner.

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## Safety

When using this product, the information and advice given in our **Safety Data Sheet** should be observed. Due attention should also be given to the **precautions** necessary for handling chemicals.

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## Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. Responsibility for compliance with the requirements of the downstream textile market rests with the textile processor.

