REX-3

Rotary Screen Emulsion (Bichromate-Free)

MURAKAMI CO., LTD.

Application

● Photo emulsion for textile printing with rotary screen.

Characteristics

● REX-3 is bichromate free, which is safe and good for environment, and also stable for long storage compared with normal bichromate emulsion..
● Applies to imaging by UV-hardening and laser-engraving process.
● Good resolution, and excellent in the image reproducibility.
● Easy developping to save your working time.

Specification

- Viscosity…apx1000mPa・s(25℃)
  Color…Blue
- Package…5kg set
  ※ Please inquire other size.

Resistance

Test Solvent	Evaluation	Test Solvent	Evaluation
Water	◎	Ethylene Glycol Methyl Ether	○
Xylene	○	Cyclohexane	○
Acetone	○	5%Sodium Hydroxide	○
Ethyl Acetate	○	5%Sulfuric acid	○
Ethylene Glycol	○		

◎・○ : Good △ : Fair × : Not recommended

Usage

<Preparation>

- Control viscosity of REX-3 by adding water to emulsion (refer to viscosity curve in next page)
- Dissolve attached cross-linking agent into water and add the mixture to REX-3 emulsion. (Use water to adjust viscosity)
- After adding cross-linking agent to REX-3, store it at cool and dark places one day or filter it with screen mesh etc. to remove bubbles prior usage.

<Making stencil>

- Coat REX-3 on a screen slowly not to contain bubbles into screen opening.
- After coating on a rotary screen, dry screen completely with warm air around 40℃ (20-40 min.)
- After drying, expose the coated screen.(Guide line: 10～15 times or 2 to 6minutes)) ※
  (※Figures above are only a guideline, please find out your best exposure time by step test.)
- After exposure, soak the screen mask into water for 1 to 2 minutes, and develop image by the developing unit.
- Once image is developed roughly, develop image detail parts and inside of the screen with low pressure water.
- After the screen is completely dried, repair some pinholes if you found.

<Heat hardening>

- Harden emulsion on the screen with drying chamber at temperature of 180℃ for 90-120 minutes, after drying process.

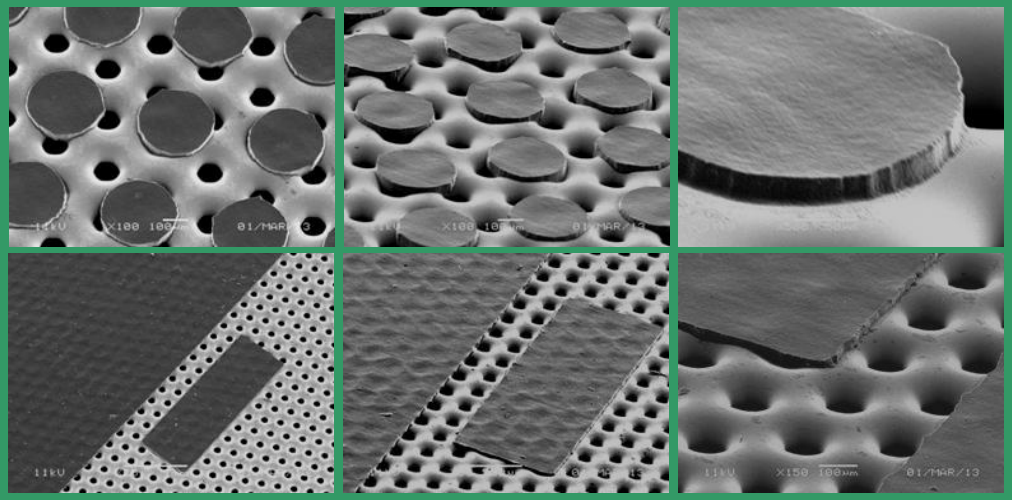
※ Heating at low temperature leads to insufficient hardening of emulsion.

- After taken out from a drying chamber, the coated screen should be cooled down at room temperature.

【Caution】

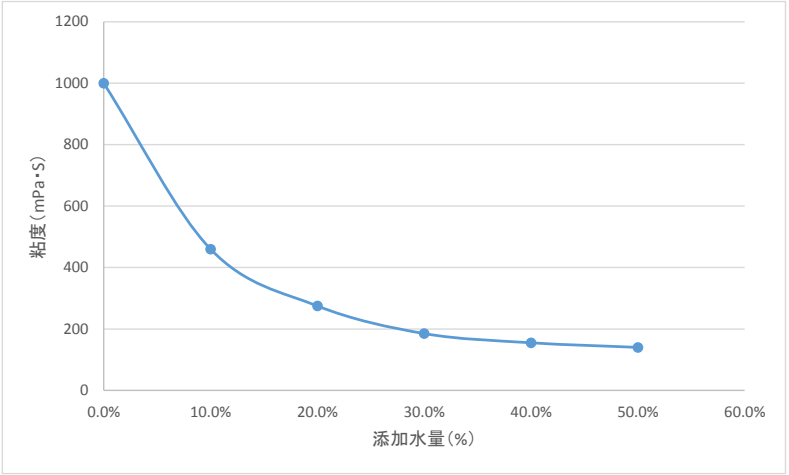
- REX-3 needs to be stored in a cool and UV safe place.
- Once Dilluting water and cross-linking agent are added to REX-3, please use up within 2 weeks.
- After use, it's recommended to filter remaining emulsion to prevent foreign particles prior to pour it back to a bottle

SEM



Viscosity curve

Please refer to it as guideline for viscosity control.



Example
Nickel rotary screen (#105)

Diluting water: 30%
Viscosity: Apx.200mPa・s
Coating speed: 15cm/min
EOM: 15μm

Stability chart

REX-3 is superior to conventional bichromate emulsion in terms of its stability.
Especially the difference comes to be more typical after coating.

	Bichromate emulsion		REX-3	
	Resolution (μm)	Developing time ※2	Resolution (μm)	Developing time
Coating date	150	-	100	-
a day later	175※1	1.2	100	1
3 days later	250※1	2.6	100	1
a week later	300<※1	3.2	125	1.3

※1:Image deterioration ※2:Ratio in comparison with the figure of coating date.

Test conditions
- Add cross linking agent to each emulsion and leave for 5 hours to remove bubbles.
- Coat each emulsion on rotary screens with 15μ m thickness. (EOM:15μ m)
- Store the coated screens under a shading condition at 25℃.
- Expose and develop them after the indicated days passed.

REX-3 makes it possible to stock coated screens. Work flow becomes more efficient.