



**QUASAR** s.r.l. **FABBRICA INCHIOSTRI PER SERIGRAFIA E DIGITALE**

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## CHARACTERISTICS AND TECHNIQUES OF

# 270.000 EPOXERI

### SAFETY SPECIFICATIONS

Prime quality Inks with a special epoxide resin base. All the components of 270 EPOXERI comply with the REACH regulation (EC) n. 1907/2006 of the European Parliament and of the Council concerning the registration, evaluation, authorization and restriction of chemicals and related updates and summaries. 270 EPOXERI complies with the ISO EN 71/9 standard concerning the presence of dangerous solvents. 270 EPOXERI is exempt from the following substances subject to registration:

- persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) substances in compliance with Annex XIII Reach;
- substances included in the list subject to authorization, defined in accordance with Article 59;
- substances that exceed EEC limits in the workplace;
- substances subject to restrictions on the manufacture, placing on the market and use of substances and preparations such as defined in Annex XVII;
- SVHC substances (Substances of Very High Concern) listed in the CANDIDATE LIST of substances of very high concern for Authorization, published in accordance with Article 59 of the REACH Regulation.

The precise choice of having no harmful and toxic components allows 270 EPOXERI to be used safely in the workplace, extending the intervals of legal visits.

The formulation of any Sample Tint for the reproduction of each is provided free of charge to customers color according to the spectrophotometric method.

### CHARACTERISTICS AND ADHERENCE

270 EPOXERI has a glossy aspect and is perfectly homogeneous and flocculations are absent. The particular solvent mix, with a soft odour, keeps the ink fresh on the screen keeping it open even during printing pauses. The base resins give the inks discreet elasticity and optimum resistance against scratching. It adheres to many ferrous supports, aluminum, brass, raw and pre-painted sheets, stainless steel, all previously degreased and deoxidized. The degree of oxidation of the metal is proportional to the poor seal of the ink. Deoxidation must be done in an acid bath or in soda. In both cases it is necessary to neutralize the metal in the 1% sodium bicarbonate bath, then wash in water and dry. Printing must be done within the following 8 hours. 270 EPOXERI adheres to glass, pre-treated polyethylene and polypropylene (> 40 DIN), melamine, ennobled and in general to all thermo-hardening substrates. In case of uncertainty, test the material with a test print and evaluate the ink adhesion after at least 72 hours, cold, or 1 hour after post-firing cooling according to the tables shown. Test on multiple points throughout the surface to avoid adherence to individual areas. The base resins give the ink a fair elasticity which, however, is reduced over time.

### RESISTANCE

270 EPOXERI is based on epoxy resins which require the addition of 20% (see label) of the catalyst 270.020 Catalyst. The addition of 270.020 CATALIST (or 270.018 Tampograico) reduces the life of the preparation to 8 hours. In this period of time it is necessary to do the printing. In the following hours the ink will tend to polymerize and must be disposed of. 270 EPOXERI is manufactured with quality pigments that reach, in the range of the color chart, the maximum values of the wool scale 7/8, 8 as per the UNI 5773-66 which establishes the criteria and the estimation of the quality values of the pigments. 270 EPOXERI has a fair resistance to the outside not exceeding 1 year, always in compliance with the thickness values of the screen printing matrix and the deposited thickness which must be greater than 20 microns. 270 EPOXERI has resistance to rubbing with ethyl alcohol greater than 100 rubs and, in specific cases, can resist thermoforming. When baked correctly to specifications it is resistant to unleaded petrol, acids and solvents from the table described below.

For prolonged outdoor exposure we recommend the Thermolux 272.000 series. Bleed cutting or deep drawing must be carried out before complete polymerization to avoid ink chipping (at least within the first 12 hours).

Resistance	Curing 150°c x 20'	After 72hrs (enviroment)
Extra Nitrate solvent Anti-fog	> 50 rubbings	> 10 rubbings and melts
Methylene chloride	> 50 rubbings	> 10 rubbings and melts
Ethylglycol acetate	>100 rubbings	> 50 rubbings
Butylglycol	>100 rubbings	> 50 rubbings
Ethyl acetate	>100 rubbings	> 60 rubbings
Acetic acid	> 50 rubbings	> 30 rubbings

Washing up liquid	>100 rubbings	> 100 rubbings
Glass cleaning detergent	>100 rubbings	> 100 rubbings
Break oil	> 80 rubbings	> 40 rubbings
Ecological petrol	> 80 rubbings	> 40 rubbings
Epoxic paint stripper	> 20 rubbings	> 5 rubbings
After 96 hours in saline fog	> 100 dry rubbings	> 100 dry rubbings
After 60' vapour treatment	> 100 dry rubbings	> 50 dry rubbings

#### METHOD OF USE AND DRYING

All the EPOXERI inks must be catalized for at least 10' before use with CATALIST 270.020 (or 270.018 for Pad Printing) in the percentages shown in the following table:

CATALIST 270.020 (o 270.018 Pad Printing) from 20% to 25% depending on the color	TECHNICAL SPECIFICATIONS
Mix lasts	8 hours
ADDED 270.020 (or 270.018) CATALIST BY WEIGHT	read the percentage of catalyst 270.020 (or 270.018) to be added to each color of 270 Epoxers directly on each product package.
DRYING AND HANDLING AT ROOM TEMPERATURE	after 1 hour the support is dust-free and can be manipulated: it can be stacked and processed.
ROOM TEMPERATURE POLYMERIZATION	after 72 hours (at 20 °C - 25 °C and relative humidity 55% - 65%) the support is almost completely polymerized
OVEN COOKING POLYMERIZATION	90 °C - 60 minutes 120 °C - 40 minutes 150 °C - 20 minutes

#### CMYK FOUR-COLOR PRINT

270 Epoxeri EUROPA four-color process scale uses the Europa Scale according to the ISO 2846 standard. In four-color process it is very useful to enhance the thixotropic capacity of the ink by mixing it with THIXOTROPIC AGENT 270.130 in the appropriate measure without fear of the loss of intensity of the color tone. The dilution of the four-color ink must be done with Slow Thinner 290.22 and only rarely with retardants. The Slow Thinner 290.22 gives the ink the properties of perfect passage through the meshes of the fabric with excellent stitch accuracy, especially negative. During four-color printing, it is recommended to re-integrate the ink on the frame with other slightly more diluted ink at set times.

In the Four-color selection, always use the UCR or better GCR option and follow the wire diameter / stitch diameter ratio values. For information on correcting the densitometric selection curves in order to obtain the exact reproduction of the original and reduce the effects of Tint Error, Trapping, Print Contrast, etc., it is advisable to consult the Treatise on Serigraphy, by Franco Lo Giudice.

#### PAD PRINTING

270 Epoxeri can be pad printed using the special 270.018 pad printing catalyst in the same proportions as catalyst 270.020 (from 20% to 25% depending on the color). The special formulation satisfies all the requests for pad printing applications and is able to offer inks that adapt to all the supports on the market even with specific treatments or additives for the most difficult cases. For the Tampographic application it is not necessary to add any specific thinner but to use the screen printing ones: Normal Thinner 290.14 and Slow Thinner 290.22.

#### THINNERS

It is always best not to exaggerate with thinners so as to avoid ink precision loss. It is always a good idea to shake the inks before use, not manually but with a motorized rotor for about 4/5 minutes at not less than 1.000 turns a minute. Thinning should then be done after this process. The standard thinners suggested are: Normal 290.14 and Slow 290.23. A vast range of thinners, however, is available for every type of application.

THINNERS	HARMFUL	Evaporation	TECHNICAL FEATURES
QUICK 290.01 (RAPIDO 290.01)	non-toxic, faint odor	quick	medium adhesion power of the supports; suitable for printing of funds and large areas
QUICK 290.03 (RAPIDO 290.03)	harmful strong smell	very quick	by spray, high adhesion power of the all metal supports; suitable for large area prints not suitable for polycarbonate; medium notching power

<b>NORMAL 290.14 (NORMALE 290.14 )</b>	harmful faint odor	slow	low adhesion power of the supports, acts as a slow diluent on some vinyl supports.
NORMAL 290.15 (NORMALE 290.15)	non-toxic, faint odor	average	medium adhesion power of the supports, also suitable for all metal supports and thermoplastic supports; for common printing
<b>SLOW 290.22 (LENTO 290.22)</b>	non-toxic, faint odor	very slow	medium adhesion power of the supports. Specifically for four-color and definition printing, it always leaves the ink fresh on the frame, not affecting drying times.
SLOW 290.23 (LENTO 290.23 )	harmful faint odor	slow	good adhesion power of all metal supports also suitable for thermoplastic substrates of common printing, it keeps the ink fresh on the frame
RETARDANT 290.35 (RITARDANTE 290.35 )	non-toxic no smell	none	no attack power of the substrate, it remains inside the dried ink for a long time. It delays the evaporation of the other solvents present. Max concentration 5%. Specific for the 270, 272, 273 series.
LEVELING 291.13 (LIVELLANTE 291.13)	non-toxic no smell	none	eliminates the creep produced by the silicone present on the ink or substrate to be printed. Add max 1% to the ink., Specific for 270 EPOXERI

#### PRINTING ADVICE

Always use screens which are well stretched with a slight inclination of the mesh to avoid the CLOSING EFFECT. Adopt all the techniques connected to reducing the RZ factor. With this in mind we advise you to consult *Trattato di Serigrafia: (Dealing with Screen Printing)* by Franco Lo Giudice edited by Tirrenia Stampatori, Turin. For high definition printing use floodbar with sharp blades and polyurethane rubbers of high shore. Better still if supported. In the case of full underbases always take into consideration the fact that the spreading out of the ink works better with fast printing and not the contrary. A large amount of solvent evaporates during printing and so the amount lost must be reintegrated. It would also be advisable to add some more, slightly thinner ink to the screen at established intervals. It is better to keep the printing constant even if somewhat slower and not to vary speeds. This stabilises as much as possible the thixotropy in the inks. When washing the screen, this must be done globally and not in sections, at least during high definition printing.

Ink yield exceeds 35mq with 120.34 PW mesh, with an average emulsion thickness: RZ Factor 10/15. The stencil must be resistant to solvents. The best mesh ranges from 77.55 PW for underbases to 150.31 PW for low line halftone four colour process printing.

#### PRODUCT LIFESPAN

EPOXERI can be kept in closed tins in rooms with a maximum thermal temperature of between 5° > 40°C, up to 2 years without any particular damage. If it is kept for longer it is advisable to dilute the ink using a blade so that the evaporated thinners are reintegrated.

#### GUARANTY

QUASAR produces inks and screenprinting products with competence and experience and a quality control system with regards to raw materials used during the various elaboration processes.

Product components undergo a series of controls and continuous check and the results are archived along with the necessary samples of each separate product. This is of course in the interests not only of the manufacturer but also the customer.

The use and application of QUASAR srl products is so vast to escape every type of control, so the only guarantee that is guaranteed is the replacement of the product if it is proved to be defective or erroneous production.

The printer is therefore always responsible for choosing the type of ink used, and must perform appropriate preventive printing tests in order to verify the suitability for specific requests.

However, the major number of printing problems arise from bad application or a bad product choice.

QUASAR laboratory and its technicians are available to give advice, make necessary corrections to, or personalise, their screen printing products.

We do therefore always hope for a tight collaboration with our customers so that we can always improve in the screen printing environment. The guarantees of quality and production are recognized by QUASAR srl exclusively for their inks packed in the original containers of kg.1 and 5 and in all the other packages of mother

house sealed at the origin.

**COLOURS IN PRODUCTION SERIES 270.000**

018 CATALIST TAMPOGRAFICO	321 ROSSO VIVO	800 NERO
020 CATALIST STANDARD	400 AZZURRO	271 GIALLO EUROPA
100 BASE TRASPARENTE	421 BLU OLTREMARE	371 MAGENTA EUROPA
130 GEL TIXOTROPICO	431 BLU MEDIO	471 CYAN EUROPA
200 GIALLO FREDDO	451 BLU NOTTE	871 NERO EUROPA
241 GIALLO CALDO	521 VERDE MEDIO	291.13 LIVELLANTE
300 ARANCIO	541 VERDE SOLIDO	
311 ROSSO GIALLASTRO	700 BIANCO	

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