

## PRODUCT DESCRIPTION

Developer K45 is a highly concentrated solution of potassium carbonate designed for development of all aqueous dry film resists and photoimageable solder masks.

Developer K45 is economical to use and easy to handle.

Wide operational parameters and high dry film capacity (1 litre of concentrate will develop 12 m<sup>2</sup> of 40 micron thick film) provide good development latitude.

Consistent developing times are obtained throughout the recommended operating life of the solution.

### Benefits:

- Long life
- Consistency of developing time
- Low operating temperatures
- Very low bicarbonate content

## PHISICAL PROPERTIES

Form	Colourless
pH	> 13
Density	1.320 – 1.340 g/cm <sup>3</sup>

## MAKE-UP PROCEDURE

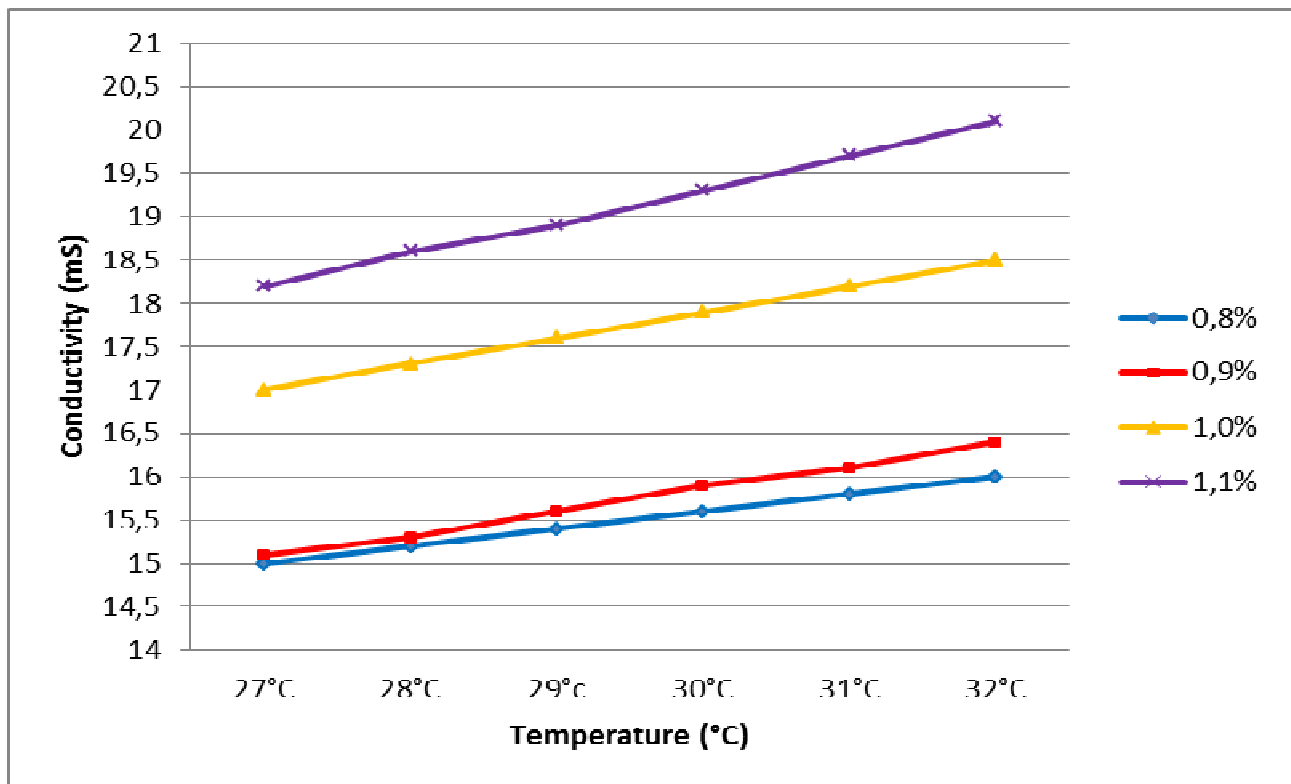
Component	Quantity
DI Water	98%
Developer K45	2%

## OPERATING PARAMETERS

Parameters	Range	Optimum
<b>Concentration K<sub>2</sub>CO<sub>3</sub></b>	0.8 – 1.0%	0.9%
<b>pH</b>	10.3 – 10.9	10.6
<b>Temperature</b>	27 – 32°C	30°C
<b>Contact time</b>	20 – 60 seconds	

If operation of Developer K45 produces excessive foaming, Antifoam C should be added in increments of 0.1 ml per litre sump volume, until foaming is reduced to an acceptable level.

## CONDUCTIVITY



\*: the developing solution has been made with DI water.

## ANALYSIS PROCEDURE

### Determination of total carbonate

#### Equipment

- Pipette
- 50ml burette
- 250ml Erlenmeyer flask

#### Reagents

- HCl Solution 0.1N
- Bromocresol Green Indicator

#### Procedure

1. Pipette 10ml of working solution into a 250ml Erlenmeyer flask.
2. Add 100ml of DI water.
3. Add 3-4 drops of Bromocresol Green Indicator.
4. Titrate with HCl 0.1N from blue to a yellow-green end point.

#### Calculation

$$\% \text{ Potassium Carbonate} = \text{ml HCl} * \text{N} * 0.69$$

$$\text{g/l Potassium Carbonate} = \frac{(\text{ml HCl} * \text{N} * 138.20) / 2}{10}$$

## MAINTENANCE

Add fresh Developer K45 to maintain the Total Carbonate at make-up concentration.

To increase the total carbonate concentration by 0.1% add 2ml per litre of sump volume Developer K45 solution.

## EQUIPMENT

<b>Equipment</b>	<b>PVC, PP, PE, Stainless Steel</b>
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## **PACKAGING**

25 litre or 200 litre polyéthylène drums or 1000 litre polyéthylène tanks.

## **STORAGE**

Only store Developer K45 in original containers, upright, away from direct sunlight and in a dry area at 10 – 30°C.  
Keep container closed when not in use.

## **HANDLING PRECAUTIONS**

Contains alkaline ingredients that are irritating to the skin and eyes.

Avoid contact with eyes, skin and clothing, do not ingest.

**READ MATERIAL SAFETY DATA SHEET PRIOR TO HANDLING THIS PRODUCT**

**In case of order please indicate this code:**

**Developer K45**

**F78001**

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Any such special or particular description shall be taken only as the expression of seller's opinion in that behalf. The seller does not give any warranty as to the quality (save that the goods are of merchantable quality), state condition fitness of the goods or use to which the goods may be put.

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No claim shall be entertained after the expiration of the appropriate period mentioned above and the seller's liability by reason of any such claim shall not in any event the purchase price of the goods in respect of which a claim is made. Goods shall not be returned to the seller without the seller's express written permission.



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