

DEVELOPER K45

PRODUCT DATA SHEET

EDITION 03 – 21st JUNE 2023

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 m² 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

PHYSICAL PROPERTIES

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

MAKE-UP PROCEDURE

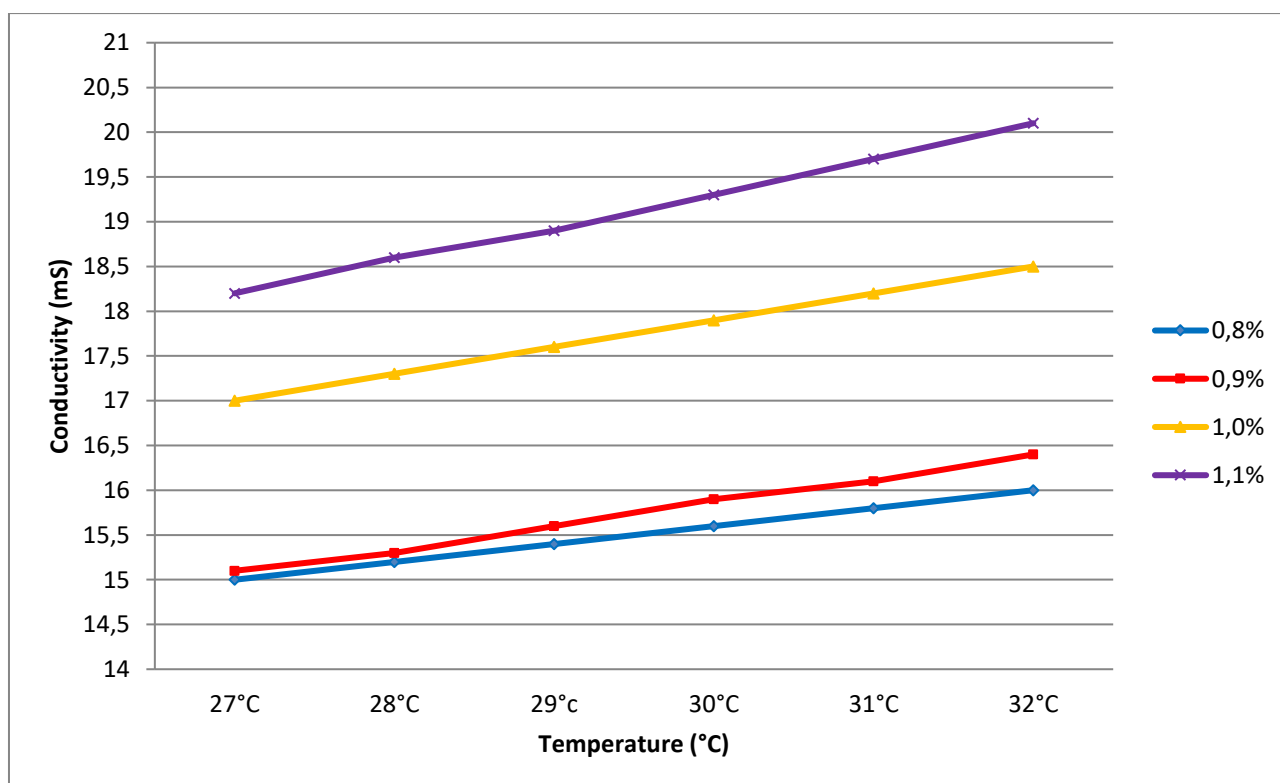
Component	Quantity
DI Water	98%
Developer K45	2%

OPERATING PARAMETERS

Parameters	Range	Optimum
Concentration K_2CO_3	0.8 – 1.0%	0.9%
pH	10.3 – 10.9	10.6
Temperature	27 – 32°C	30°C
Contact time	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

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

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

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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

Equipment	PVC, PP, PE, Stainless Steel
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PACKAGING

- 5, 25 litre or 200 litre polyethylene drums.

Primary packaging	Plastic drums code HDPE ₂
Secondary packaging	Transparent polyethylene bag code LDPE ₄ or corrugated cardboard box code PAP ₂₀
Tertiary packaging	- Wooden pallet code FOR ₅₀ or in plastic code PP ₅ - Overpacking stretch film code LDPE ₄

- 1000 litre polyethylene tanks.

Primary packaging	Plastic IBC code HDPE ₂
Secondary packaging	- Transparent polyethylene bag code LDPE ₄ - Tank (IBC) metal cage (if present) code FE ₄₀
Tertiary packaging	- Wooden pallet code FOR ₅₀ or plastic PP ₅ - Polypropylene fastening strap code PP ₅ - Overpacking stretch film code LDPE ₄

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.

Claims on account of weight, loss of or damage to the goods in transit (so far as seller is liable) shall be made in writing to the seller within the period of 30 days of receipt thereof.

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.