



## Certificates of Analysis for:

### **KODAK ACCUMAX Rapid Access Developer & Replenisher Kodak Rapid Fixer and Replenisher**

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Dear Valued Customer:

Kodak takes great care in assuring product quality and that all product is released to Kodak specifications.

The purpose of this document is to provide the following information for the developer and fixer used in the printed circuit board industry:

1. Appropriate catalog numbers for each region
2. Specifications & practical data for chemical assay, pH and solution density

Kodak is proud of its quality assurance programs. The relevant ISO certifications can be found on the Kodak website. ISO certification ensures Kodak manufactures product to strict specifications using statistical process control methods that are well documented and maintained.

Kodak does not recommend customers test for these quality properties. Testing outside of tightly controlled laboratory conditions is highly variable and may not be a good indicator of product conformance. Kodak will gladly re-test product suspected to be non-conforming to specifications. Contact your local Kodak Representative if you should have any product questions.

Best Regards,

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## SECTION I: Catalog numbers by Region

	KODAK ACCUMAX Rapid Access Developer & Replenisher	KODAK Rapid Fixer and Replenisher
Americas	8875569	1749837
Europe, Africa, Middle East	5272869	3781192
Asia	6620009	6620017

## SECTION II: Certificates of Analysis

Property	KODAK ACCUMAX™ Developer and Replenisher 5L bottle		KODAK RAPID Fixer and Replenisher 5L bottle	
	Mid-point Specification	Range	Mid-point Specification	Range
<b>Expiration date</b> (Date stamped on top of bottle)	Two years from date of manufacture	—	Two years from date of manufacture	—
<b>pH</b>	10.53 pH @ 25°C (diluted 1:2)	+/- 0.07 pH	5.10 pH @ 25°C (diluted 1:3)	+/- 0.10 pH
<b>Hydroquinone</b>	75.0 g/l	+/- 3.8 g/l	—	—
<b>Sodium Bromide</b>	15.0 g/l	+/- 0.6 g/l	—	—
<b>Potassium Sulfite 45%</b>	500 g/l	+/- 20 g/l	—	—
<b>Solution Density</b>	1.085 g/ml (diluted 1:2)	+/- 0.005 g/ml	1.077 g/ml (diluted 1:3)	+/- 0.005 g/ml

**Batch Code:** Information can be located on product cases and bottles. The first four numbers indicate the year and week number the solution was manufactured, e.g., batch code 0917 was manufactured in 2009, week 17.



## SECTION III: Useful pH range of working strength solutions

Under normal usage conditions, pH increase of developer and fixer is not a problem. There is sufficient processing latitude to maintain satisfactory performance, with normal pH changes. There are no published limits since there has been no known problem. Some suggested limits are shown in the table, far right column.

### Typical working strength pH values for Kodak Accumax Developer and Rapid Fixer:

Solution pH <sup>2</sup>	Fresh Mix pH	Seasoned High Tank Turnover pH	Seasoned Low Tank Turnover pH	Suggested Limit to Discard pH
<b>KODAK ACCUMAX Developer</b> and Replenisher 5L bottle cat no. 8875569  Working strength 1:2	10.5 pH	10.65	10.8	11.1
<b>KODAK RAPID Fixer</b> and Replenisher 5L bottle cat no. 1749837  Working strength 1:3 <b>No Hardener</b>	5.0 to 5.2	5.0 to 5.5	5.0 to 5.5	6.5
<b>KODAK RAPID Fixer</b> and Replenisher 5L bottle cat no. 1749837  Working strength 1:3 <b>with Hardener</b> <sup>3</sup>	4.3 to 4.5	4.8 to 5.0	4.8 to 5.0	6.5

Notes:

<sup>2</sup> Measuring pH outside of strict laboratory controlled conditions is highly variable. For more information on measuring pH, refer to this Kodak pH test method document #: ULM 191-2 or



KPCQ-A-PR-G-PCT-191-2:

Ulm1912.pdf

<sup>3</sup> Hardener reduces gelatin swell rate and is useful to enhance film drying in high relative humidity conditions, or to minimize the appearance of roller or dryer marks from the photo processor. However, hardener must be properly mixed into the fixer solution, or it will precipitate. Precisely follow mixing instructions for adding hardener to fixer solutions.

**Kodak**