

Safety Data Sheet

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1. Identification of the substance/preparation and of the company/undertaking

Product name: KODAK RA 3000 Fixer and Replenisher Concentrate

Product code: 3488913

Supplier: Kodak Limited Business Centre, Hemel One, Boundary Way, HP2 7YU, Hemel Hempstead

For Health, Safety & Environmental information, write to KODAK LIMITED, Product Safety Advisory Service, Headstone Drive, Harrow, Middlesex, HA1 4TY or telephone (020) 8424 4506.

IN EMERGENCY, telephone: (020) 8427 4380.

For other product information, telephone 01442 261122 or email kes@kodak.com.

Synonyms: F1567

Product Use: photographic processing chemical (fixer), For industrial use only.

2. Hazards identification

Not a hazardous substance or preparation according to EC-directives 67/548/EEC or 1999/45/EC.

3. Composition/information on ingredients

| Weight % | Component | CAS-No. | EINECS-No./ ELINCS No. | Classification |
|----------|-----------------------------|------------|---------------------------|----------------|
| 40 - 45 | Ammonium thiosulphate | 7783-18-8 | 231-982-0 | ** |
| 1 - 5 | sodium hydrogensulphite...% | 7631-90-5 | 231-548-0 | Xn; R22, R31* |
| 1 - 5 | acetic acid...% | 64-19-7 | 200-580-7 | C; R10, R35* |
| 1 - 5 | Boric acid | 10043-35-3 | 233-139-2 | ** |

* Symbol and R Phrase according to EC Annex I

** Substance not listed in EC Annex I

4. First aid measures

Inhalation: If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Eyes: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

Skin: Wash off with soap and water. Get medical attention if symptoms occur.

Ingestion: If swallowed, get medical attention if symptoms occur.

5. Fire-fighting measures

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Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Flush with plenty of water.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, (see also Hazardous Decomposition Products section).

Unusual Fire and Explosion Hazards: Dried product residue can act as a reducing agent. Reacts violently with oxidizing materials. May cause spontaneous heating and ignition when absorbed on combustible, porous material (e.g. rags, paper, sawdust, cotton, clothing).

6. Accidental release measures

Personal precautions: See Section 8 for recommendations on the use of personal protective equipment.

Environmental precautions: Prevent spillage from entering drains. Absorb spill with vermiculite or other inert absorbant material such as sand or earth, then place in a suitable container for proper disposal. Clean surface thoroughly with water to remove residual contamination.

Waste disposal: Contaminated absorbent should be disposed of in accordance with local regulations.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups. Remove and wash contaminated clothing promptly.

Storage: Cool conditions (5 - 30°C). Store in original container. Keep container tightly closed to prevent the loss of water. Keep away from incompatible substances (see Incompatibility section.)

Ventilation: Match ventilation rates to conditions of use so as not to exceed any applicable exposure limits (see Section 8). Good general ventilation of 10 or more room volumes per hour in the work area is recommended.

8. Exposure controls / personal protection

Occupational exposure controls

| Chemical Name | Regulatory List | Value Type | Value |
|-----------------------------|-----------------|---------------------------|----------------------|
| sodium hydrogensulphite...% | UK EH40 WELs | time weighted average | 5 mg/m ³ |
| acetic acid...% | EU ELV | time weighted average | 25 mg/m ³ |
| sodium hydrogensulphite...% | ELV (IE) | time weighted average | 5 mg/m ³ |
| acetic acid...% | ELV (IE) | time weighted average | 25 mg/m ³ |
| | ELV (IE) | Short term exposure limit | 37 mg/m ³ |
| | EU ELV | time weighted average | 25 mg/m ³ |
| Sulphur dioxide | ELV (IE) | time weighted average | 5 mg/m ³ |
| | ELV (IE) | Short term exposure limit | 13 mg/m ³ |

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Ventilation: Avoid exposure to mists and vapours by mixing solutions in closed vessels and/or under local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions.

Respiratory protection: In case of insufficient ventilation wear suitable respiratory equipment.

Eye protection: Wear safety glasses with side shields (or goggles).

Skin and body protection: Using the information provided in Section 2, seek the advice of the glove supplier as to the most suitable glove material. Avoid skin contact when mixing or handling the substance/preparation or a mixture by wearing impervious gloves and protective clothing appropriate to the risk of exposure.

Use chemical resistant gloves. In case of prolonged immersion or frequently repeated contact:

| Material | Thickness | Breakthrough time |
|----------------|------------|-------------------|
| Nitrile rubber | >= 0.38 mm | > 480 min |
| Neoprene | >= 0.65 mm | > 240 min |
| butyl-rubber | >= 0.36 mm | > 480 min |

Avoid natural rubber gloves.

The protective gloves to be used must comply with the specifications of the EC directive 89/686/EEC and the resultant standard EN 374. This recommendation applies only to the product stated in the Safety Data Sheet and supplied by us as well as to the purpose specified by us.

Recommended Decontamination Facilities: Safety shower, eye wash, washing facilities as appropriate to condition of use.

9. Physical and chemical properties

Physical form: liquid

Colour: light yellow

Odour: slight sulphur, acetic acid

Specific gravity: 1.31

Vapour pressure: 24 mbar (18.0 mm Hg)

Vapour density: 0.6

Volatile fraction by weight: 40 - 45 %

Boiling point/boilingrange: 100.0 °C (212.0 °F)

Water solubility: complete

pH: 5.1

Flash point: does not flash

10. Stability and reactivity

Stability: Stable under normal conditions.

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Incompatibility: Acids, Strong bases, sodium hypochlorite (bleach), Halogenated compounds, Oxidizing agents. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with base liberates flammable material. Contact with base liberates ammonia.

Hazardous decomposition products: Ammonia, chloramine.

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

Inhalation: Expected to be a low hazard for recommended handling. Some asthmatics or hypersensitive individuals may experience difficulty breathing if exposed to aerosols or decomposition products that are not anticipated during normal use.

Eyes: No specific hazard known. May cause transient irritation.

Skin: Expected to be a low hazard for recommended handling. This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Ingestion: Expected to be a low ingestion hazard. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

Data for Ammonium thiosulphate (CAS 7783-18-8):

Acute Toxicity Data:

- Oral LD50 (male rat): 500 - 5,000 mg/kg

Data for sodium hydrogensulphite...% (CAS 7631-90-5):

Acute Toxicity Data:

- Oral LD50 (rat): > 1,600 mg/kg

Data for acetic acid...% (CAS 64-19-7):

Acute Toxicity Data:

- Oral LD50 (rat): 3,310 - 3,530 mg/kg
- Oral LD50: 4,960 mg/kg
- Inhalation LC50: 5620 ppm / 1.00 hr
- Dermal LD50: 1,060 mg/kg
- Skin irritation: severe
- Eye irritation: severe
- Eye irritation (washed eyes): severe
- Eye irritation (unwashed eyes): severe

Data for Boric acid (CAS 10043-35-3):

Acute Toxicity Data:

- Oral LD50 (rat): > 1,600 mg/kg

12. Ecological information

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The following properties are ESTIMATED from the components of the preparations.

Potential Toxicity:

Toxicity to fish (LC50): > 100 mg/l

Toxicity to daphnia (EC50): > 100 mg/l

Toxicity to algae (IC50): > 100 mg/l

Toxicity to other organisms (EC50): > 100 mg/l

Persistence and degradability: Readily biodegradable.

Chemical Oxygen Demand (COD): 346 g/l

Biochemical Oxygen Demand (BOD): 280 g/l

13. Disposal considerations

This information is provided to assist users in the correct disposal of working solutions prepared and used to Kodak specifications.

Working solution: Recover silver before disposal. Waste material is currently classified as hazardous under Council Directive 91/689/EEC. The European Waste Catalogue Code is 09 01 04 Fixer solutions. Dispose according to the local regulations or guidelines that apply to the category of waste. Ensure the use of properly authorised waste management companies.

Product containers: If thoroughly cleaned, preferably by rinsing at least three times with small quantities of water, waste product packaging may be consigned for recovery or disposal as non hazardous waste. Whenever possible, minimize waste by using the rinsing water to make up the working solution. The European Waste Catalogue Code is 15 01 02 plastic packaging.

Waste product packaging contaminated by residues of hazardous contents should be consigned for disposal as hazardous waste. In this case, the European Waste Catalogue Code is 15 01 10 packaging containing residues of or contaminated by dangerous substances.

14. Transport information

Not regulated for all modes of transportation.

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

| Regulatory List | Notification status |
|-----------------|----------------------|
| EINECS | y (positive listing) |
| TSCA | y (positive listing) |
| AICS | y (positive listing) |
| DSL | y (positive listing) |

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| | |
|------------|----------------------|
| ENCS (JP) | n (Negative listing) |
| KECI (KR) | y (positive listing) |
| PICCS (PH) | y (positive listing) |
| INV (CN) | y (positive listing) |

A N (Negative listing) indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

Labelling:

Not a hazardous substance or preparation according to EC-directives 67/548/EEC or 1999/45/EC.*

*Safety data sheet available for professional user on request.

16. Other information

The following is an explanation of the meaning of the Symbol letters and Risk Phrases for the pure substance(s) referred to in Section 2 of this Safety Data Sheet.

C: Corrosive
Xn: Harmful

R10: Flammable.
R22: Harmful if swallowed.
R31: Contact with acids liberates toxic gas.
R35: Causes severe burns.

Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.
