Safety Data Sheet

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

Product name: KODAK Rapid Fixer, Working solution (film)

Product code: 1973247 - Working solution (film)

Synonyms: None.

Relevant identified uses of the substance or mixture and uses advised against:
Identified uses: photographic processing chemical (fixer). For industrial use only.

Supplier: Kodak Alaris Inc., 2400 Mount Read Boulevard, Rochester, NY 14615

IN EMERGENCY, telephone: 1-800-424-9300 or +1 703-527-3887.

For further information about this product, email EHS-Questions@Kodakalaris.com.

2. Hazards identification

Classification of the chemical in accordance with paragraph (d) of 29 CFR 1910.1200:

Hazard class	Hazard category	Route of exposure
Reproductive toxicity	Category 1B	--

GHS-Labelling

Contains:
Boric acid (10043-35-3)

Symbol(s):

Signal word: Danger

Hazard statements: May damage fertility or the unborn child.

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response: IF exposed or concerned: Get medical advice/ attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation.

Other hazards which do not result in classification:

Dried product residue can act as a reducing agent.

HMIS III Hazard Ratings: Health - 1*, Flammability - 1, Physical Hazard - 0

NFPA Hazard Ratings: Health - 1, Flammability - 1, Instability - 0

NOTE: HMIS III and NFPA 704 (2007) hazard indexes involve data review and interpretation that may vary among companies. They are intended only for rapid, general identification of the magnitude of the potential hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
10 - 15	Ammonium thiosulphate (7783-18-8)
0.1 - 1	Boric acid (10043-35-3)
0.1 - 1	Sodium bisulphite (7631-90-5)
0.1 - 1	Acetic acid (64-19-7)

4. First aid measures

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lens, if worn. Get medical attention if symptoms persist.

Skin: Wash off immediately with soap and plenty of water. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.

Ingestion: If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms and effects, both acute and delayed: No information available.

Indication of any immediate medical attention and special treatment needed:

Treatment: No information available.

5. Firefighting measures

Extinguishing Media: Water spray, Dry chemical, Carbon dioxide (CO2), Foam.

Special hazards arising from the substance or mixture
Hazardous Combustion Products: Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, (see also Hazardous Decomposition Products sections.)

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

Unusual Fire and Explosion Hazards: None.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Refer to protective measures listed in sections 7 and 8.

Methods and materials for containment and cleaning up: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Prevent runoff from entering drains, sewers, or streams.

Environmental precautions: No information available.

7. Handling and storage

Precautions for safe handling

Personal precautions: Avoid contact with eyes, skin, and clothing. Avoid breathing mist or vapour. Use only with adequate ventilation. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials.

Ventilation: Good general ventilation of 10 or more room volumes per hour in the work area is recommended.

Conditions for safe storage, including any incompatibilities: Keep in a dry, cool and well-ventilated place. Cool conditions (5 - 30°C). Keep container tightly closed. Keep away from food, drink and animal feeding stuffs. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls/personal protection

Occupational exposure controls: Not established

Appropriate engineering controls: Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

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

Hand protection: Wear protective gloves/ protective clothing.

Respiratory protection: If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn. If respirators are used, a program should be instituted to assure compliance with applicable federal, state, commonwealth, provincial, or local laws and regulations.

9. Physical and chemical properties

Physical form: liquid

Colour: colourless

Odour: slight sulphur dioxide

Specific gravity: 1.09

Vapour pressure (at 20.0 °C (68.0 °F)): 24 mbar (18.0 mm Hg)

Vapour density: 0.6

Boiling point/boiling range: > 100 °C (> 212.0 °F)

Water solubility: complete

pH: 4.4

Flash point: does not flash

Evaporation rate: No data available

Flammability (Solid; gas): No data available

Upper explosion limit: No data available

Lower explosion limit: No data available

Partition coefficient: n-octanol/water: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing properties: No data available

10. Stability and reactivity

Reactivity: No data available

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Hazardous polymerisation does not occur.

Conditions to avoid: No data available

Incompatible materials: Acids, Strong bases, sodium hypochlorite (bleach), Halogenated compounds, Oxidizing agents. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with strong acids may liberate sulphur dioxide.

Hazardous decomposition products: Ammonia, sulphur dioxide, chloramine, Nitrogen oxides (NOx)

11. Toxicological information

Effects of Exposure

General advice:

Contains: Boric acid. Based on repeated-dose ingestion studies in animals, may cause adverse reproductive and developmental effects.

Inhalation: Expected to be a low hazard for recommended handling.

Eyes: May cause transient irritation.

Skin: Causes mild skin irritation.

Ingestion: Expected to be a low ingestion hazard.

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

Acute Toxicity Data:
Oral LD50 (male Rat): 500 - 5,000 mg/kg

- Oral LD50 (Rat): 1,950 mg/kg
- Inhalation (Rat): 2260 mg/m3 / 4 hr
- Eye irritation: none

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

Acute Toxicity Data:
Oral LD50 (Rat): 2,660 mg/kg

- Dermal LD50 (Rabbit): > 2,000 mg/kg
- Skin irritation: moderate
- Skin Sensitization (Guinea pig): none
- Eye irritation: slight irritation

Mutagenicity/Genotoxicity Data:

- Salmonella/Mammalian-Microsome Reverse Mutation Screening Assay (TA98, TA100, TA1535, TA1537, TA1538): negative (in presence and absence of activation)
- Mouse lymphoma assay: negative (in presence and absence of activation)
- Sister chromatid exchange (SCE) assay (Chinese Hamster Ovary (CHO)): negative (in presence and absence of activation)
- Unscheduled DNA synthesis (UDS) assay (rat hepatocytes): negative (in absence of activation)
- Mouse micronucleus assay: negative

Definitions for the following section(s): LOEL =lowest-observed-effect level, LOAEL = lowest-observed-adverse-effect, NOAEL = no observed-adverse-effect level, NOEL =no-observed-effect level.

Repeated dose toxicity:

- Feeding study (24 months, male and female Rat): NOAEL; 100 mg/kg/day

- Feeding study (24 months, male and female Rat): Lowest observed effect level; 334 mg/kg/day (target organ effects: testes)

Developmental Toxicity Data:

- Oral (female Rat): maternal NOAEL; 78mg/kg/day
- Oral (female Rat): NOAEL for developmental toxicity; < 78mg/kg/day

Reproductive Toxicity Data:

- Feeding Study (male and female Mouse): NOEL for reproductive toxicity; < 152 mg/kg/day

Carcinogenicity:

- Oral study (females Mouse, 2 years): NOEL; 1,150 mg/kg/day

Data for Acetic acid (CAS 64-19-7):

Acute Toxicity Data:

Oral LD50 (Rat): 3,320 mg/kg

- Oral LD50 (Rat): 3,310 mg/kg
- Inhalation LC50 (Rat): 11.4 mg/l / 4 hr
- Dermal LD50 (Rabbit): 1,060 mg/kg
- Skin irritation: severe
- Eye irritation (washed eyes): severe
- Eye irritation (unwashed eyes): severe

Data for Sodium bisulphite (CAS 7631-90-5):

Acute Toxicity Data:

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

- Oral LD50 (Rat): 1,310 mg/kg
- Dermal LD50 (Rat): 2,000 mg/kg
- Eye irritation (May irritate eyes.): mild

Carcinogenicity

American Conference of Governmental Industrial Hygienists (ACGIH):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
International Agency for Research on Cancer (IARC):	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
U.S. National Toxicology Program (NTP):	No component of this product present

	at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
U.S. Occupational Safety and Health Administration (OSHA):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
California Prop. 65	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

12. Ecological information

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

Potential Toxicity:

Toxicity to fish (LC50):	> 100 mg/l estimated
Toxicity to daphnia (EC50):	> 100 mg/l estimated

Persistence and degradability: Readily biodegradable

This product has not been tested for environmental effects.

Bioaccumulative potential

No data available

Mobility in soil

No information available.

13. Disposal considerations

Discharge, treatment, or disposal may be subject to federal, state, commonwealth, provincial, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

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
TSCA	All listed
DSL	All listed
NDSL	None listed
EINECS	All listed
ELINCS	None listed
NLP	None listed
AICS	All listed
IECS	All listed
ENCS	All listed
ECI	All listed
NZIoC	All listed
PICCS	All listed
TCSI	All listed

"Not all listed" 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.

Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
International Agency for Research on Cancer (IARC):	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
U.S. National Toxicology Program (NTP):	No component of this product present

	at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
U.S. Occupational Safety and Health Administration (OSHA):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
California Prop. 65	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	No components of this product are subject to the SARA Section 302 (40 CFR 302.4) reporting requirements.
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):	No components of this product are subject to the SARA Section 302 (40 CFR 355) reporting requirements.
U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting):	Ammonium thiosulphate
U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances:	No components found on the California Director's List of Hazardous Substances.
U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens:	No components found on the California Specifically Regulated Carcinogens List.
U.S. - California - 8 CCR Section 5203 Carcinogens:	No components found on the California Section 5203 Carcinogens List.
U.S. - California - 8 CCR Section 5209 Carcinogens:	No components found on the California Section 5209 Carcinogens List.
U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law):	Ammonium thiosulphate
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	No components found on the Minnesota Employee Right-to-Know List of Hazardous Substances.

U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	No components regulated under the New Jersey Worker and Community Right-to-Know Act.
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Water , Ammonium thiosulphate , Ammonium sulphite , Acetic acid , Sodium bisulphite

16. Other information

The data below reflects current legislative requirements whereas the product in your possession may carry a different version of the label depending on the date of manufacture.

US/Canadian Label Statements:

KODAK Rapid Fixer, Working solution (film)

Contains:
Boric acid (10043-35-3)

Symbol(s):

Signal word: Danger

Hazard statements: May damage fertility or the unborn child.

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response: IF exposed or concerned: Get medical advice/ attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation.

FIRST AID: If symptomatic, move to fresh air. Get medical attention if symptoms persist. Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lens, if worn. Get medical attention if symptoms persist. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use. If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention. Keep out of reach of children. Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood. Since emptied containers retain product residue, follow label warnings even after container is emptied. **IN CASE OF FIRE:** Water spray, Dry chemical, Carbon dioxide (CO2), Foam. **IN CASE OF SPILL:** Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Prevent runoff from entering drains, sewers, or streams.

R-1, S-1, F-1, C-0 REPO