SAFETY DATA SHEET

KODAK PROFESSIONAL TMAX Fixer

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name: KODAK PROFESSIONAL TMAX Fixer
Obtain special instructions before use.

Product no.: 1059915

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture: Photographic chemical for processing black and white film and paper.
Restricted to professional users.

Use descriptors (UK REACH):

Sectors of use	**Description**
LCS "C"	Consumer uses: Private households (= general public = consumers)
Product category	**Description**
PC 30	Photochemicals
Process category	**Description**
PROC 19	Hand-mixing with intimate contact and only PPE available

Uses advised against : None known.

1.3. Details of the supplier of the safety data sheet

Company and address:

Photo Systems Inc.
7190 Huron River Drive
MI 48130 Dexter
USA
Tel: +1 (734) 424-9625
Fax: +1-734-580-2199
www.photosys.com

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

Manufacturer:

Photo Systems Inc.
7190 Huron River Drive
MI 48130 Dexter
USA
Tel: +1 (734) 424-9625
Fax: +1-734-580-2199
www.photosys.com

Contact person:	Jake Bolt
E-mail:	jake@photosys.com
Revision:	26/02/2024
SDS Version:	1.0

1.4. Emergency telephone number

Contact The National Poisons Information Service (dial 111, 24 h service).
See section 4 “First aid measures”.

SECTION 2: HAZARDS IDENTIFICATION

Classified according to Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

2.1. Classification of the substance or mixture

Skin Irrit. 2; H315, Causes skin irritation.
Repr. 1B; H360, May damage fertility or the unborn child.

2.2. Label elements

Hazard pictogram(s):

Signal word:	Danger
Hazard statement(s):	Causes skin irritation. (H315) May damage fertility or the unborn child. (H360)
Precautionary statement(s):	
General:	-
Prevention:	Obtain special instructions before use. (P201) Wash hands and exposed skin thoroughly after handling. (P264) Wear eye protection/protective gloves/protective clothing. (P280)
Response:	IF exposed or concerned: Get medical advice/attention. (P308+P313)
Storage:	-
Disposal:	Dispose of contents/container in accordance with local regulation (P501)
Hazardous substances:	acetic acid Borax Pentahydrate Sodium Hydroxide 50% Solution Disodium disulphite
Additional labelling:	Restricted to professional users.

2.3. Other hazards

Additional warnings:	This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification. This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria

set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable. This product is a mixture.

3.2. Mixtures

Product/substance	Identifiers	% w/w	Classification	Note
Ammonium Thiosulfate 60% Solution	CAS No.: 7783-18-8 EC No.: 231-982-0 UK-REACH: Index No.:	60-80%		
acetic acid	CAS No.: 64-19-7 EC No.: 200-580-7 UK-REACH: Index No.: 607-002-00-6	5-10%	Flam. Liq. 3, H226 Skin Corr. 1A, H314 Eye Dam. 1, H318	[1]
Borax Pentahydrate	CAS No.: 12179-04-3 EC No.: 601-808-1 UK-REACH: Index No.: 005-011-00-4	3-5%	Eye Irrit. 2, H319 Repr. 1B, H360 (SCL: 6.50 %)	[5]
Sodium Hydroxide 50% Solution	CAS No.: 1310-73-2 EC No.: 215-185-5 UK-REACH: Index No.: 011-002-00-6	3-5%	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318	
Disodium disulphite	CAS No.: 7681-57-4 EC No.: 231-673-0 UK-REACH: Index No.: 016-063-00-2	1-3%	Acute Tox. 4, H302 Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Dam. 1, H318	

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

[1] European occupational exposure limit.
[5] Substance is included in the Candidate List of substances of very high concern (SVHC).

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information: In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet.

	Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.
Inhalation:	Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her. Get medical attention if symptoms occur.
Skin contact:	Immediately flush skin with plenty of water. Remove contaminated clothing. Get medical attention in if symptoms occur or in case of eczema or other skin disorders.
Eye contact:	If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.
Ingestion:	Never give anything by mouth to an unconscious person. No NOT induce vomiting. Rinse mouth. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Get medical attention immediately.
Burns:	Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

Most important known symptoms and effects are described in the labeling (see Section 2.2 and in Section 11.)

4.3. Indication of any immediate medical attention and special treatment needed

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

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
No unusual fire or explosion hazards noted
Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Possible incompatible material reactions are contact with strong acids may liberate sulfur dioxide. Contact with sodiun hyprochlorite (bleach) may form chloramine (toxic gas). Contact with base liberates ammonia. Contact with base liberates flammable material.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.
Hazchem Code: None

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Use personnel protective equipment and clothing recommended in Section 8.
Avoid direct contact with spilled substances.
Ensure adequate ventilation, especially in confined areas.
Contaminated areas may be slippery.

6.2. Environmental precautions

Prevent product from entering drains, water courses or onto the ground.
Avoid discharge to lakes, streams, sewers, etc. In the event of leakage to the surroundings, contact local environmental authorities.

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 “Disposal considerations” on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Obtain special instructions before use. do not handle until all safety precautions have been read and understood. Do not get this material in contact with eyes. Do not taste or swallow. Avoid contact with skin and clothing. Avoid prolonged exposure. When using, Do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling.
Avoid direct contact with the product.
Avoid contact during pregnancy and while nursing.
Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material:	Keep only in original packaging.
Storage temperature:	Dry, cool and well ventilated
Incompatible materials:	Strong acids Strong oxidizing agents Sodium hypochlorite (bleach) Bases Halogenated materials

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational Exposure Limits
acetic acid
Long term exposure limit (8 hours) (ppm): 10
Long term exposure limit (8 hours) (mg/m^3): 25
Short term exposure limit (15 minutes) (ppm): 20
Short term exposure limit (15 minutes) (mg/m^3): 50

Sodium Hydroxide 50% Solution
Short term exposure limit (15 minutes) (mg/m^3): 2

Disodium disulphite
Long term exposure limit (8 hours) (mg/m^3): 5

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002.
EH40/2005 Workplace exposure limits (Fourth Edition 2020).

DNEL

acetic acid

Duration:	**Route of exposure:**	**DNEL:**
Long term – Local effects - General population	Inhalation	25 mg/m^3
Long term – Local effects - Workers	Inhalation	25 mg/m^3
Short term – Local effects - General population	Inhalation	25 mg/m^3
Short term – Local effects - Workers	Inhalation	25 mg/m^3

Ammonium Thiosulfate 60% Solution

Duration:	**Route of exposure:**	**DNEL:**
Long term – Systemic effects - General population	Inhalation	104 mg/m^3
Long term – Systemic effects - Workers	Inhalation	350 mg/m^3
Long term – Systemic effects - General population	Oral	13 mg/kg bw/day

Disodium disulphite

Duration:	**Route of exposure:**	**DNEL:**
Long term – Systemic effects - General population	Inhalation	66 mg/m^3
Long term – Systemic effects - Workers	Inhalation	225 mg/m^3
Long term – Systemic effects - General population	Oral	8.6 mg/kg bw/day

Sodium Hydroxide 50% Solution

Duration:	**Route of exposure:**	**DNEL:**
Long term – Local effects - General population	Inhalation	1 mg/m^3
Long term – Local effects - Workers	Inhalation	1 mg/m^3

PNEC

acetic acid

Route of exposure:	**Duration of Exposure:**	**PNEC:**

Freshwater		3.058 mg/L
Freshwater sediment		11.36 mg/kg
Intermittent release (freshwater)		30.58 mg/L
Marine water		305.8 µg/L
Marine water sediment		1.136 mg/kg
Sewage treatment plant		85 mg/L
Soil		470 µg/kg

Ammonium Thiosulfate 60% Solution

Route of exposure:	**Duration of Exposure:**	**PNEC:**
Freshwater		780 µg/L
Marine water		78 µg/L
Sewage treatment plant		100.1 mg/L

Disodium disulphite

Route of exposure:	**Duration of Exposure:**	**PNEC:**
Freshwater		1 mg/L
Marine water		100 µg/L
Sewage treatment plant		75.4 mg/L

8.2. Exposure controls

Good ventilations (typically 10 air changes per hour) should be uses. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below recommended exposure limits. Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations: Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios: There are no exposure scenarios implemented for this product.

Exposure limits: Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

Appropriate technical measures: Do not recirculate outlet air that contain the substances. The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.
Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures: Take off contaminated clothing and wash it before reuse.

Measures to avoid environmental exposure: Keep damming materials near the workplace. If possible, collect spillage during work.

Individual protection measures, such as personal protective equipment

Generally: Wash contaminated clothing before reuse.

Use only UKCA marked protective equipment.

Respiratory Equipment:

Type	Class	Colour	Standards	
organic vapor/P95	P95			

Skin protection:

Recommended	Type/Category	Standards	
Dedicated work clothing should be worn.	-	-	

Hand protection:

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Gloves	-	-	EN374	

Eye protection:

Type	Standards	
Face shield alternatively safety glasses with side shields.	EN166	
Safety glasses with side shields.	EN166	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Colour: Clear

Odour / Odour threshold: sharp vinegar

pH: 5

Density (g/cm^3): -

Relative density: 1.32

Kinematic viscosity: No data available

Particle characteristics: Not applicable

Phase changes

Melting point/Freezing point (°C): No data available

Softening point/range (waxes and pastes) (°C): Does not apply to liquids.

Boiling point (°C):	100
Vapour pressure:	18 mmHg
Relative vapour density:	0.6
Decomposition temperature (°C):	No data available

Data on fire and explosion hazards

Flash point (°C):	Not applicable
Flammability (°C):	The material is not combustible.
Auto-ignition temperature (°C):	No data available
Lower and upper explosion limit (% v/v):	Not applicable

Solubility

Solubility in water:	Completely soluble
n-octanol/water coefficient (LogKow):	Testing not relevant or not possible due to the nature of the product.
Solubility in fat (g/L):	Testing not relevant or not possible due to the nature of the product.

9.2. Other information

Sensitivity to shock:	No
Dust explosion class:	St0 (No explosion)
Evaporation rate (n-butylacetate = 100):	No data available
Oxidizing properties:	Not applicable
Other physical and chemical parameters:	No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
This product is stable and non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
The product is stable under the conditions, noted in section 7 “Handling and storage”.

10.3. Possibility of hazardous reactions
Hazardous polymerization does not occur.

10.4. Conditions to avoid
Incompatible materials.

10.5. Incompatible materials
Strong acids
Strong oxidizing agents
Sodium hypochlorite (bleach)
Bases
Halogenated materials

10.6. Hazardous decomposition products

Ammonia. Chloramine. Nitrogen oxides (NOx).
Sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008 as retained and amended in UK law

Acute toxicity

Prolonged inhalation may be harmful. Mist or vapors irritating.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory sensitisation

Not a respiratory sensitizer.

Skin sensitisation

This product is not expected to cause skin sensitization.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Long term effects

Reproductive toxicity: This product contains teratogenic substances, which may produce anomalies and/or developmental defects to the human offspring. Adverse effects include: death, growth retardation, congenital disorders, delayed mental development, and functional disorders. This product contains reprotoxic substances, which may harm the reproductive capacity. Adverse effects include: sterility, effects on the sexual function, lowered effective fertility and dysfunctional menstrual cycle.
Irritation effects: This product contains substances, which may cause irritation upon exposure to skin, eyes or lungs. Exposure may result in an increased absorption potential of other hazardous substances at the area of exposure.

Endocrine disrupting properties

This mixture/product does not contain any substances known to have hormone-disrupting properties in relation to health.

Other information

None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2. Persistence and degradability
Not readily biodegradable.

12.3. Bioaccumulative potential
Based on available data, the classification criteria are not met.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Endocrine disrupting properties
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warning potential) are expected from this component.

12.7. Other adverse effects
None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods
Waste Treatment Methods: Product waste material must be disposed of in accordance with the national and local regulations. handle uncleaned containers like the product itself.
Product is covered by the regulations on hazardous waste.
HP 8 – Corrosive
HP 10 – Toxic for reproduction
Dispose of contents/container to an approved waste disposal plant.
Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

EWC code
Not applicable.

Specific labelling

Contaminated packing
Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: TRANSPORT INFORMATION

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR	-	Not regulated as dangerous goods entry		-	No	See below for additional information.
IMDG	-	Not regulated as dangerous goods entry		-	No	See below for additional information.
IATA	-	Not regulated as dangerous goods entry		-	No	See below for additional information.

* Packing group

** Environmental hazards

Additional information

Not dangerous goods according to ADR, IATA and IMDG.
Hazchem Code: None

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Restrictions for application: Restricted to professional users.
People under the age of 18 shall not be exposed to this product.
Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

Demands for specific education: No specific requirements.

SEVESO - Categories / dangerous substances: Not applicable.

UK-REACH, Annex XVII

acetic acid is subject to UK-REACH restrictions, UK-REACH annex XVII (entry 40).

Additional information: Not applicable.

Sources: The Management of Health and Safety at Work Regulations 1999.
The Health and Safety at Work etc. Act 1974 Regulations 2013.
Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) as retained and amended in UK law.
Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as retained and amended in UK law.

15.2. Chemical safety assessment

No

SECTION 16: OTHER INFORMATION

Full text of H-phrases as mentioned in section 3

H226, Flammable liquid and vapour.
H290, May be corrosive to metals.
H302, Harmful if swallowed.
H314, Causes severe skin burns and eye damage.
H315, Causes skin irritation.
H317, May cause an allergic skin reaction.
H318, Causes serious eye damage.
H319, Causes serious eye irritation.
H360, May damage fertility or the unborn child.

The full text of identified uses as mentioned in section 1

LCS "C" = Consumer uses: Private households (= general public = consumers)
PROC 19 = Hand-mixing with intimate contact and only PPE available
PC 30 = Photochemicals

Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

The classification of the substance/mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

The safety data sheet is validated by

Validated by Photo Systems Inc./cf

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
It is recommended to hand over this safety data sheet to the actual user of the product.
Information in this safety data sheet cannot be used as a product specification.

DISCLAIMER: The information contained in this Safety Data Sheet is correct to the best of our knowledge and experience at the time of publication. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. It is the user's responsibility to assure the proper use, storage and disposal of these materials to ensure the safety and health of the user and to protect the environment.
Country-language: GB-en