SECTION 1: Identification of the substance/preparation and of the company/undertaking

1.1 Product identifier

Product name: Fixer F

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

Recommended use: Printing ink for paper, textile, wood, and film.

Product description: Hardening agent.

1.3 Details of the supplier of the Safety Data Sheet

Supplier: Matsui Shikiso Chemical Co., Ltd.
64, Kamikazan Sakuradani-cho, Yamashina-ku, Kyoto, 607-8466, JAPAN
Telephone no.: +81 75 594 5612

E-mail: msc-export@msc-color.co.jp

Agency: Matsui International Co., Inc.
1501 West 178th Street, Gardena, CA 90248, U.S.A.
Telephone no.: (310) 767-7812

1.4 Emergency telephone number

+81 (75) 594-5612 / (310) 767-7812

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to regulation (EC)No. 1272/2008 [CLP]:
See Section 16.

Classification according to Council Directive 67/548/EEC:
Not classified.

2.2 Label elements

None.

2.3 Other hazards

Steam inhalation or skin contact may cause toxic effect because this product contains a small amount of ethyleneimine. Skin contact may cause eczematous dermatitis. Mutagenicity is positive (microbial testing).

SECTION 3. Composition/information on ingredients

3.2 Mixtures

Hardening agent of ethyleneurea compounds:
Concentration 10-15%
CAS No. 7417-99-4
EC No. 231-034-6

Nonylphenol, ethoxylated:
Concentration 1.0-1.5%
CAS No. 9016-45-9
EC No. 500-024-6

Ethyleneimine:
Concentration several ppm
CAS No. 151-56-4
EC No. 205-793-9
SECTION 4. First-aid measures

4.1 Description of first aid measures

Inhalation: Immediately remove to fresh air. Seek medical attention immediately.

Skin contact: Remove contaminated clothes and shoes. Immediately wash with mild soap and water. Seek medical attention as needed.

Eye contact: Immediately flush eyes with water for at least 15 minutes occasionally lifting lower and upper lids, until no evidence of chemical remains. Seek medical attention.

Ingestion: Rinse mouth thoroughly with water. Give water in a conscious state. Never induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

Self-protection of the first aider

Wear gloves and then get rid of contaminated clothes or protective equipment.

4.2 Most important symptoms and effects, both acute and delayed

Eczematous dermatitis.

4.3 Indication of any immediate medical attention and special treatment needed

No special measures needed.

SECTION 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media: In case of combustion, use water, dry chemical, or foam.

Unsuitable extinguishing media:

No data available.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:

No data available.

5.3 Advice for firefighters:

In case of fire, wear respirator. Keep containers cool with water spray, if it can be done without risk move container from fire area.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes. Wear protective gloves and goggles. Respiratory protection is worn in an ill-ventilated area.

6.2 Environmental precautions

Avoid releasing spilled material into rivers and/or lakes to prevent environmental impact. If material is released to public water in large amounts, advise local authority.
6.3 Methods and materials for containment and cleaning up
Ventilate area.
For small spill, absorb with dry sand, soil, saw dust or rag. Collect into container for disposal and wipe the remaining up with rag.
For large spill, dike with soil, blanket or sandbags to prevent from entering public waters, and collect into container with shovel or vacuum.

6.4 Reference to other sections
Refer to section 8 and 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling
Protective measures: Wear suitable protective equipment and clothing as needed to prevent the material from contacting skin and eyes. Use only in well-ventilated area.
Do not breathe vapour or mist. Keep container tightly closed after each use.

Advice on general occupational hygiene:
Wash thoroughly after handling. Do not eat, drink, or smoke during work.

7.2 Conditions for safe storage, including any incompatibilities
Technical measures storage conditions:
Store in a cool and dark place away from direct sunlight. Avoid humidity, high temperature, and freezing. Keep container tightly closed.

Packaging materials: stainless-steel, polyethylene, polypropylene

7.3 Specific end uses
Refer to Section 1.2

SECTION 8 Exposure controls/personal protection

8.1 Control parameters
Occupational exposure limit values:
Ethyleneimine ACGIH - TWA 0.5 ppm

8.2 Exposure controls
Appropriate engineering controls:
Local exhaust ventilation and general ventilation is necessary during indoor operation. Especially when vapours or mists can be released in excess of established airborne exposure limits.

Personal protection equipment:
- Respiratory protection: Wear chemical-cartridge respirator.
- Hand protection: Wear rubber or plastic gloves.
- Eye protection: Wear safety glasses or chemical goggles.
- Skin and body protection: Wear long pants, long sleeves and face shield when applicable.

Hygiene measures:
Provide acceptable facilities to wash hand and eyes within the immediate work area for emergency use.
SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

- **Appearance:** White viscous liquid.
- **Odour:** Slight odour.
- **pH:** 9.5 ± 0.5
- **Melting point:** Approx. 0°C
- **Boiling point:** Approx. 100°C
- **Flash point:** No data available.
- **Evaporation rate:** No data available.
- **Flammability:** If this product is dry, it may be flammable.
- **Upper/lower flammability or explosive limits:** No data available.
- **Vapour pressure:** No data available.
- **Vapour density (air=1):** No data available.
- **Relative density:** 1.10 ± 0.05
- **Solubility:** Miscible.
- **Partition coefficient:n-octano/water:** No data available.
- **Auto-ignition temperature:** No data available.
- **Decomposition temperature:** No data available.
- **Viscosity:** < 5,000 mPa·s (25°C)
- **Explosive Properties:** Not applicable.
- **Oxidizing Properties:** Not applicable.

SECTION 10. Stability and reactivity

10.1 Reactivity

No specific reactivity under normal condition.

10.2 Chemical stability

Stable under normal handling and using condition.

10.3 Possibility of hazardous reaction

Polymerization reaction with acid substance generates heat.

10.4 Conditions to avoid

- Heating.
- Low pH.

10.5 Incompatible materials

- Acid substance.

10.6 Hazardous decomposition products

In case of combustion, NOx is generated.
SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity: Oral mouse LD50 > 442 mg/kg
Dermal rat LD50 > 2,000 mg/kg

Irritation:
Skin: Skin contact may cause eczematous dermatitis.

Corrosivity: No data available.

Sensitisation: No data available.

Repeated dose toxicity: No data available.

Reproductive toxicity: Suspected of damaging fertility or the unborn child.

Carcinogenicity: Ethyleneimine is possibly carcinogenic to humans. Repeated or prolonged exposure increases the risk.

Mutagenicity: Mutagenicity is positive (microbial testing).

Toxicity for reproduction: No data available.

SECTION 12. Ecological information

12.1 Toxicity

Acute toxicity: No data available.

Chronic toxicity:
Fish: No data available.
Crustacea: No data available.
Algae/aquatic plants: No data available.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
Possible.

12.5 Result of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

SECTION 13. Disposal considerations

13.1 Waste treatment method

Product/packaging disposal: Dispose of in accordance with local, national, and EU regulations.

Sewage disposal-relevant information:
Do not dump this product into sewers, on the ground or into any body of water.
SECTION 14. Transport information

14.1 UN No. Not applicable.
14.2 UN proper sipping name Not applicable.
14.3 UN Class Not applicable.
14.4 UN Packing Group Not applicable.
14.5 Environmental hazards Not applicable.
14.6 Special precautions for user

Refer to section 6 and 8.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No transport as bulk.

SECTION 15. Regulatory information

15.1 Safety, health and environmentatal regulation/legislation specific for the substance or mixture

EU regulations

(EC) No. 2037/2000: Not applicable.
(EC) No. 689/2008: Nonylphenol, ethoxylated is listed in part 1 and 2 of Annex 1.
(EC) No. 850/2004: Not applicable.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this mixture.

SECTION 16. Other information

Classification according to regulation (EC)No. 1272/2008 [CLP]:

<table>
<thead>
<tr>
<th>Hazard class</th>
<th>Hazard category</th>
<th>H-statements</th>
<th>P-codes</th>
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</thead>
<tbody>
<tr>
<td>Acute Toxicity (Oral)</td>
<td>4</td>
<td>H302</td>
<td>P264</td>
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<td></td>
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<td>P270</td>
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<td>P501</td>
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<tr>
<td>Germ cell mutagenicity</td>
<td>2</td>
<td>H341</td>
<td>P201</td>
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</table>

See below for full text of H-statements and P-codes.

Label elements:

Signal word: Danger
Full text of H-statements: H302; Harmful if swallowed.
H341; Suspected of causing genetic defects

Full text of P-codes: P201; Obtain special instructions before use.
P202; Do not handle until all safety precautions have been read and understood.
P260; Do not breathe fume/gas/mist/vapours/spray.
P264; Wash … thoroughly after handling.
P270; Do no eat, drink or smoke when using this product.
P281; Use personal protective equipment as required.
P301+312; IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P308+P313; IF exposed or concerned: Get medical advice/attention.
P330; Rinse mouth.
P405; Store locked up.
P501; Dispose of contents/container in accordance with local/regional/national/international regulation.

Indication of changes: This updated MSDS has changed to adapt to Regulation (EU) No. 453/2010.

Abbreviations and acronyms:

- **CAS**: Chemical Abstracts Service number
- **CLP**: Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
- **IBC-Code**: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk
- **LC50**: Lethal Concentration to 50% of a test population
- **LD50**: Lethal Dose to 50% of a test population (Median Lethal Dose)
- **MARPOL**: The International Convention for the Prevention of Pollution from Ships
- **PBT**: Persistent, Bioaccumulative and Toxic substance
- **vPvB**: Very Persistent and Very Bioaccumulative

Key literature references and sources for data:

- *Guidance on the compilation of safety data sheets* (Version 1.1 – December 2011)
- *IUCRD Chemical Data Sheet*
The information set forth herein is to the best knowledge and belief of MATSUI SHIKISO CHEMICAL CO., LTD. If not employed as directed, we do not guarantee that the hazard precautions or procedures mentioned above are the only ones which exist and we do not assume responsibility in case of unusual use of this product.