

1 PRODUCT AND COMPANY IDENTIFICATION

Product Name: MICROSTRIP® 5002

Product Number: 00000000000844168

Synonyms: None

Company:

FUJIFILM Electronic Materials U.S.A., Inc.
80 Circuit Road
North Kingstown, RI 02852

Emergency Telephone:

Transportation Emergency:
FOR ALL TRANSPORTATION ACCIDENTS,
CALL CHEMTREC: 1-800-424-9300

Medical Emergency (24HR):

FOR ANY HEALTH & MEDICAL
EMERGENCY, 24 HOURS /7 DAYS CALL:
1-800-365-8951

Non-emergency Telephone:

General Information:
FOR ALL MSDS REQUESTS & QUESTIONS,
CALL CUSTOMER SERVICE: 1-800-553-6546

Intended Use: Side Wall Polymer Cleaner

2 HAZARDS IDENTIFICATION

Emergency Overview

Physical State: Liquid

Color: Colorless

Odor: Ammonia

WARNING!

Causes skin, eye and respiratory tract irritation. May be harmful if absorbed through skin or swallowed.

Potential Health Effects

Inhalation: Causes respiratory tract irritation.

Eye Contact: Causes eye irritation. Liquid will cause severe conjunctivitis and corneal damage.

Skin Contact: Causes skin irritation. May cause allergic skin reaction. May be harmful if absorbed through skin. Causes severe skin irritation on prolonged or repeated contact.

Ingestion: May be harmful if swallowed. This material may produce methemoglobin which, in sufficient concentration, causes cyanosis, a blue-gray discoloration of the skin and lips caused by a reduced ability of the blood to carry oxygen.

Chronic Health Effects: May cause allergic skin reaction. May cause methemoglobinemia. The effects might be delayed. Hydroxylamine sulfate: Limited evidence of a carcinogenic effect.

Target Organ(s): | Respiratory system | Eye | Blood. Skin |

Potential Physical / Chemical Effects: This product is not flammable or combustible.

OSHA Regulatory Status: This product is hazardous according to OSHA 29CFR 1910.1200.

Environment: The product contains a substance which is very toxic to aquatic organisms.

3 COMPOSITION / INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No. | Concentration* |
|--------------------------------|------------|----------------|
| †Hydroxylamine sulfate | 10039-54-0 | 15 - < 25% |
| †Tetramethylammonium hydroxide | 75-59-2 | 0.01 - 1% |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
 † This chemical is hazardous according to OSHA/WHMIS criteria.

4 FIRST AID MEASURES

Inhalation: Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

Eye Contact: Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. Make sure to remove any contact lenses from the eyes before rinsing.

Skin Contact: Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Get medical attention if irritation persists after washing. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Ingestion: Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Obtain medical attention and take along this material safety data sheet.
 NOTE! Effects may be delayed. Keep affected person under observation.

5 FIRE-FIGHTING MEASURES

Extinguishing Media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable Extinguishing Media: None.

Special Fire Fighting Procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Unusual Fire & Explosion Hazards: During fire, gases hazardous to health may be formed.

Hazardous Combustion Products: Carbon Monoxide, Hydroxylamine, Nitrogen Oxides, Sulfur Oxides

Protective Measures: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing

must be worn in case of fire.

Flammability Class: 0

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid any exposure. Wear suitable protective clothing. See Section 8 of the MSDS for Personal Protective Equipment.

Spill Cleanup Methods: Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the MSDS.

Environmental Precautions: Do not discharge into drains, water courses or onto the ground.

7 HANDLING AND STORAGE

Handling: Avoid any exposure. Should be handled in closed systems, if possible. Wear approved safety goggles. Wear protective gloves and appropriate clothing to prevent skin contact. Wear respiratory protection during operations where spraying or misting occurs. Observe good industrial hygiene practices.

Storage: Store in closed original container at temperatures between 10°C (50°F) and 32°C (90°F). Store away from incompatible materials.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits: No exposure limits noted for ingredient(s) on ACGIH, OSHA and WEEL lists. Consult Canadian Provincial Regulations and/or Mexican Regulations on exposure limits, if applicable.

Engineering Controls: Should be handled in closed systems, if possible. Eye wash facilities and emergency shower must be available when handling this product.

Respiratory Protection: Wear respiratory protection during operations where spraying or misting occurs. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure air supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Eye Protection: Wear approved safety goggles.

Hand Protection: Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Skin Protection: Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.

Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling

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the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|--------------------------|
| Molecular Weight: | Not applicable. |
| Physical State: | Liquid |
| Color: | Colorless |
| Odor: | Ammonia |
| Odor Threshold: | Not applicable. |
| pH: | 4 - 4.5 |
| Freezing Point: | No data available. |
| Boiling Point: | 99°C (209°F) |
| Density: | 1 g/cc - 1.25 g/cc |
| Specific Gravity (=Relative Density): | 1 - 1.25 |
| Vapor Pressure: | Not applicable. |
| Vapor Density (Air=1): | No data available. |
| Evaporation Rate: | 1 (Approximate, water=1) |
| Volatiles, % by vol: | > 70 % Vol |
| Solubility in Water: | Completely miscible |
| Solubility (Other): | No data available. |
| Partition Coefficient (n-Octanol/water): | No data available. |
| Flash Point: | Not applicable. |
| Autoignition Temperature: | Not applicable. |
| Viscosity: | No data available. |
| Upper Flammability / Explosion limit in air %: | No data available. |
| Lower Flammability / Explosion limit in air %: | No data available. |
| Decomposition Temperature: | No data available. |

10 STABILITY AND REACTIVITY

Stability: Material is stable under normal conditions.

Conditions to Avoid: High temperatures.

Incompatible Materials: Oxidizing agents. Strong acids. Strong bases. Nitrites. Nitrates. Metal powders.

Hazardous Decomposition Products:

| | |
|---------------------------|---|
| At Elevated Temperatures: | Amines, Ammonia, Carbon Monoxide, Hydroxylamine, Methanol, Nitrogen Oxides, Sulfur Oxides, Trimethylamine |
|---------------------------|---|

Possibility of Hazardous Reactions: Will not occur.

11 TOXICOLOGICAL INFORMATION

Specified Substance(s)
Acute Toxicity:

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| Chemical Name | Test Results |
|-------------------------------|---------------------------------------|
| Hydroxylamine sulfate | Dermal LD50 (Rabbit): 1500-2000 mg/kg |
| Hydroxylamine sulfate | Oral LD50 (Rat): 937 mg/kg |
| Tetramethylammonium hydroxide | Dermal LD50 (Rat): 112 mg/kg |
| Tetramethylammonium hydroxide | Oral LD50 (Rat): 34 - 50 mg/kg |

Other Acute: Hydroamine sulfate: Causes skin and eye irritation. May be harmful if absorbed through skin or swallowed. Tetramethylammonium hydroxide: May be fatal if swallowed or absorbed through skin. Causes eye, skin and respiratory irritation.

Chronic Toxicity: Hydroxylamine sulfate: Limited evidence of a carcinogenic effect. Most of the results from the numerous studies available show no evidence of a mutagenic effect. In long-term studies in rats and mice in which the substance was given by drinking water, a carcinogenic effect was observed. Repeated oral uptake of the substance did not cause damage to the reproductive organs. No indications of a developmental toxic / teratogenic effect were seen in animal studies. May cause allergic skin reaction.

Listed Carcinogens: None.

Product Information

Acute Toxicity: Causes skin, eye and respiratory tract irritation. May be harmful if absorbed through skin or swallowed.

Chronic Toxicity: May cause allergic skin reaction. May cause methemoglobinemia. The effects might be delayed.

12 ECOLOGICAL INFORMATION

Ecotoxicity: The product contains a substance which is very toxic to aquatic organisms.

Specified Substance(s)

| Chemical Name | Test |
|-------------------------------|---|
| Hydroxylamine sulfate | EC50 (48 hour(s), Daphnia): 1.62 mg/l |
| Hydroxylamine sulfate | EC50 (72 hour(s), Plant): 0.72 mg/l |
| Hydroxylamine sulfate | LC50 (96 hour(s), Fathead Minnow): 7.2 mg/l |
| Tetramethylammonium hydroxide | BOD (20 day(s),): 27200 mg/kg |
| Tetramethylammonium hydroxide | LC50 (48 hour(s), Daphnia): 55.6 mg/l |

Mobility: The product is miscible with water. May spread in water systems.

Persistence and Degradability: No data available.

Bioaccumulation Potential: No data available.

Other Adverse Effects: No data available.

13 DISPOSAL CONSIDERATIONS

Disposal Methods: Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

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Confirm disposal procedures with environmental engineer and local regulations.

RCRA Information: D002

14 TRANSPORT INFORMATION

DOT

UN No.: UN1760

Proper Shipping Name: Corrosive liquids, n.o.s. (Hydroxylamine sulfate, Tetramethylammonium hydroxide)

Class: 8

Packing Group: III

Label(s): 8

TDG

UN No.: UN1760

Proper Shipping Name: Corrosive liquids, n.o.s. (Hydroxylamine sulfate, Tetramethylammonium hydroxide)

Class: 8

Packing Group: III

IATA

UN No.: UN1760

Proper Shipping Name: Corrosive liquid, n.o.s. (Hydroxylamine sulfate, Tetramethylammonium hydroxide)

Class: 8

Packing Group: III

Label(s): Corrosive

IMDG

UN No.: UN1760

Proper Shipping Name: Corrosive liquids, n.o.s. (Hydroxylamine sulfate, Tetramethylammonium hydroxide)

Class: 8

Packing Group: III

EmS No.: F-A, S-B

15 REGULATORY INFORMATION

Canadian Controlled Products Regulations: This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

WHMIS Classification: D2B

Inventory Status: All ingredients are listed on TSCA.

TSCA

TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated.



TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E): Not regulated.

TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated.

US Regulations

CERCLA Hazardous Substance List (40 CFR 302.4): Not regulated.

SARA Title III

Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): Not regulated.

Section 311/312 (40 CFR 370):

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

Section 313 Toxic Release Inventory (40 CFR 372): Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3): Not regulated.

Drug Enforcement Act: Not regulated.

State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Not regulated.

Massachusetts Right-To-Know List: Not regulated.

Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): Not regulated.

Minnesota Hazardous Substances List: Not regulated.

New Jersey Right-To-Know List: Hydroxylamine sulfate; Tetramethylammonium hydroxide

Pennsylvania Right-To-Know List: Not regulated.

Rhode Island Right-To-Know List: Not regulated.

16 OTHER INFORMATION

HAZARD RATINGS

| | | | | |
|--------------------------------------|---------------|-------------|-------------|----------------|
| National Fire Protection Association | Health Hazard | Fire Hazard | Instability | Special Hazard |
|--------------------------------------|---------------|-------------|-------------|----------------|

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MATERIAL SAFETY DATA

| | | | | |
|------|------|------|------|------|
| NFPA | NONE | NONE | NONE | NONE |
|------|------|------|------|------|

| Hazardous Materials Information System | Health Hazard | Flammability | Physical Hazard | Other |
|--|---------------|--------------|-----------------|-------|
| HMIS | 2* | 0 | 0 | -- |

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe * - Chronic Health Effect

MSDS file: 11805_NA_EN_V1.1
 Replaces file: 11805_NA_EN_V1.0
 Issue Date: 21-May-2008
 Supersedes Date: 02-May-2008

Disclaimer: THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200 AND THE CANADIAN CONTROLLED PRODUCT REGULATION (SOR/88-66). THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. FUJIFILM ELECTRONIC MATERIALS BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT FUJIFILM ELECTRONIC MATERIALS AT THE PHONE NUMBER 1-800-553-6546 (CUSTOMER SERVICE) TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT.

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