

ROCIMA™ 586

Industrial Microbicide for use in adhesives and tackifiers, aqueous raw materials, aqueous slurries of pigments, building materials, fountain solutions, household and consumer products, process and wash water, paint and coatings, polymer latices, printing inks and industrial cooling water and air washers



Produced for: Rohm and Haas Company,
100 Independence Mall West
Philadelphia, PA, 19106-2399
Phone: 215-592-3000

Net Weight: STENCILED ON CONTAINER

Made in United Kingdom

3/29/2010

ACTIVE INGREDIENTS:	
5-CHLORO-2-METHYL-4-ISOTHIAZOLIN-3-ONE	0.78%
2-METHYL-4-ISOTHIAZOLIN-3-ONE	0.28%
2-bromo-2-nitro-1,3- Propanediol	7.50%
INERT INGREDIENTS:	91.44%
Total:	100.00%

KEEP OUT OF REACH OF CHILDREN DANGER FIRST AID

- IF ON SKIN:**
- Take off contaminated clothing.
 - Rinse skin immediately with plenty of water for 15-20 min.
 - Call a poison control center or doctor for treatment advice.
- IF IN EYES:**
- Hold eye open and rinse slowly and gently with water for 15-20 min. Remove contact lenses, if present, after first 5 min. then continue rinsing eye.
 - Call a poison control center or doctor for treatment advice.
- IF INHALED:**
- Move person to fresh air.
 - If person is not breathing call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
 - Call a poison control center or doctor for further treatment advice.
- IF SWALLOWED:**
- Call a poison control center or doctor immediately for treatment advice.
 - Do not induce vomiting unless told to do so by a poison control center or doctor
 - Have person sip a glass of water if able to swallow. Do not give anything to an unconscious person.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

IN CASE OF EMERGENCY CALL ROHM AND HAAS COMPANY 215-592-3000

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be necessary.

SEE SIDE PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS.

CONDITIONS OF SALE AND WARRANTY

Rohm and Haas warrants that this product conforms to its chemical description and is reasonably fit for the purpose stated on the label only when used in accordance with label directions and as defined the Directions for Use on this label. ROHM AND HAAS MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES, EITHER OF MERCHANTABILITY OR FITNESS, FOR A PARTICULAR USE.

Handling, storage, and use of the product by Buyer or User are beyond the control of Rohm and Haas and Seller. Risks such as ineffectiveness or other unintended consequences resulting from, but not limited to, failure to follow directions will be assumed by the Buyer or User. TO THE EXTENT PERMITTED BY LAW, NEITHER ROHM AND HAAS NOR SELLER SHALL BE LIABLE FOR CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES RESULTING FROM THE HANDLING, STORAGE OR USE OF THIS PRODUCT.

Manufacture Date: ___/___/___

EPA Reg. No. 707-315

EPA Est No. 56485-PA-001

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

DANGER CORROSIVE CAUSES IRREVERSIBLE EYE DAMAGE CAUSES SKIN BURNS HARMFUL IF SWALLOWED OR INHALED

Do not get in eyes, on skin, or on clothing. Mixers, loaders and others exposed to this product must wear: long-sleeved shirt and long pants; chemical resistant gloves such as nitrile or butyl rubber; shoes plus socks; goggles and face shield; and chemical resistant apron. Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly. This product may cause skin sensitization reactions in some people.

ENVIRONMENTAL HAZARDS

This chemical is toxic to fish and aquatic invertebrates. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA. Do not contaminate water by cleaning of equipment or disposal of waste. Apply this pesticide only as specified on this label.

STORAGE AND DISPOSAL PESTICIDE STORAGE

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Do not apply this product in a way that will contact workers or other persons. Do not allow to freeze.

PESTICIDE DISPOSAL

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL

Nonrefillable container. Do not reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by procedures approved by state and local authorities.

GENERAL: CONSULT FEDERAL, STATE OR LOCAL DISPOSAL AUTHORITIES FOR APPROVED ALTERNATIVE PROCEDURES.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

ROCIMA™ 586 is an effective preservative in most aqueous compositions. The concentration required to give protection depends on several factors. These include the susceptibility of the system to microbiological degradation, the extent to which micro-organisms can gain access, the species involved, pH, temperature, and length of time for which protection is required.

INDUSTRIAL COOLING WATER AND AIR WASHERS

For the control of bacteria, algae, and fungi in industrial recirculating water cooling towers and industrial recirculating closed loop water cooling systems add Rocima 586 to the tower basin, distribution box, air washer sump, chilled water sump or some other point to insure uniform mixing.

INITIAL DOSE: When the system is noticeably fouled, add 200 to 1250 ppm of Rocima 586 (1.67-10.4 pounds or 24.4-152 fluid ounces of Rocima 586 per 1000 gallon of water in the system). Repeat until control is achieved.

SUBSEQUENT DOSE: When microbial control is evident, add 50 to 310 ppm of Rocima 586 (0.42-2.59 pounds or 6.1-37.8 fluid ounces of Rocima 586 per 1000 gallon of water in the system) weekly or as needed to maintain control. Badly fouled systems must be cleaned before treatment is begun.

NOTE: For use only in systems that maintain effective mist-eliminating components.

Typical applications, and the suggested range of concentrations on which trials can be based are:

Refer to the table at the end of this section for recommended dose rates.

Adhesives and Tackifiers For the control of bacteria in applications such as animal glues, vegetable glues, natural rubber latices, polyvinyl acetate, styrene-butadiene and acrylic latices and tackifiers derived from rosin and hydrocarbon resins

Aqueous raw materials For the control of bacteria in applications such as process water, silicone emulsions, surfactants used in industrial and household consumer products as well as for package utility products such as pre-moistened sponges and mops.

Aqueous Slurries of pigments For the control of bacteria in applications such as titanium dioxide or of materials such as kaolin, calcium carbonate, calcium sulfate and magnesium sulfate

Building Materials For the control of bacteria in applications such as mastics, caulks, sealants, grouts, spackling, ready-to-mix cement and wallboard compounds, and tape joint compounds

Fountain Solutions For the control of bacteria in fountain solutions used for lithographic printing operations (only use in fountain solutions that are automatically diluted prior to use at a level that ensures the final use dilution will contain these levels)

In-Can Preservation For the control of bacteria in industrial and household consumer products, including all-purpose liquid cleaners, furniture and floor polishes, pesticides, anti-tarnish products, carpet shampoos and carpet pre-spotters

Industrial Water For the control of bacteria and fungi in applications such as process water, boiler water, white water, wash water and waste water

Liquid Detergent Products For the control of bacteria in applications such as dishwashing detergents, laundry detergents, laundry pre-spotters, fabric softeners, laundry spray starch, automotive cleaners, automotive waxes, and automotive polishes

Paint and Coatings For the control of bacteria in applications such as paper coatings, wood coatings and paints used for architectural product finishes, and special-purpose coatings.

Polymer Latices For the control of bacteria in applications including acrylic, styrene/butadiene, carboxylated styrene butadiene, ethylene/vinyl acetate, biopolymers intended for industrial use such as xanthum gum, gum arabic, guar gum, protein-derived polymers, starches, casein-derived polymers and solution polymers.

Printing Inks and ink component concentrates For the control of bacteria in applications such as flexographic, gravure, screen and ink jet printing. Ensure that the final use dilution product contains the recommended dose rates.

Type of material to be protected

Adhesives and Tackifiers
Aqueous raw materials
Aqueous Slurries of pigments
Building Materials
Fountain Solutions
In-Can Preservation
Industrial Water
Liquid Detergent Products
Paint and Coatings
Polymer Latices

Printing Inks and ink component concentrates

Lbs ROCIMA™ 586 To Use Per 1,000 Lbs Of Material To Be Protected

0.5 to 2.25 lb (0.05 – 0.225%)
0.5 to 1.4 lb (0.05% - 0.14%)
0.5 to 2.25 lb (0.05 – 0.225%)
0.5 to 2.25 lb (0.05 – 0.225%)
0.5 to 2.25 lb (0.05 – 0.225%)
0.5 to 2.25 lb (0.05 – 0.225%)
0.5 to 2.25 lb (0.05 – 0.225%)
0.5 to 1.5 lb (0.05 – 0.15%)
0.5 to 2.25 lb (0.05 – 0.225%)
0.5 to 4.5 lb (0.05 – 0.45%)
0.5 to 2.25 lb (0.05 – 0.225%)

ROCIMA (TM) 586 Biocide microbicide weighs 8.763 pounds per gallon



SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY*

Product name: ROCIMA™ 586

Issue Date: 04/01/2015

Print Date: 04/01/2015

THE DOW CHEMICAL COMPANY* encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: ROCIMA™ 586

Recommended use of the chemical and restrictions on use

Identified uses: Biocidal product

COMPANY IDENTIFICATION

THE DOW CHEMICAL COMPANY*
Agent for Rohm and Haas Chemicals LLC
100 INDEPENDENCE MALL WEST
PHILADELPHIA PA 19106-2399
UNITED STATES

Customer Information Number:

215-592-3000

SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 1 800 424 9300

Local Emergency Contact: 989-636-4400

2. HAZARDS IDENTIFICATION

Hazard classification

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Acute toxicity - Category 4 - Oral

Acute toxicity - Category 2 - Inhalation

Skin corrosion - Category 1

Serious eye damage - Category 1

Skin sensitisation - Category 1

Carcinogenicity - Category 1B

Label elements

Hazard pictograms



Signal word: **DANGER!**

Hazards

Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Fatal if inhaled.
May cause cancer.

Precautionary statements

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Use personal protective equipment as required.
Wear respiratory protection.

Response

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
Wash contaminated clothing before reuse.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/ container to an approved waste disposal plant.

Other hazards

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Aqueous solution of organic and inorganic compounds

This product is a mixture.

Component	CASRN	Concentration
Water	7732-18-5	89.0 - 90.0 %
Bronopol	52-51-7	7.0 - 9.0 %
Sodium nitrate	7631-99-4	1.0 - 2.0 %
5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4	>= 0.75 - <= 0.85 %
2-Methyl-4-isothiazolin-3-one	2682-20-4	>= 0.23 - <= 0.31 %

4. FIRST AID MEASURES

Description of first aid measures

Inhalation: Move to fresh air. Give artificial respiration if breathing has stopped. If symptoms persist, call a physician.

Skin contact: IMMEDIATELY get under a safety shower. Remove contaminated clothing. Wash off with soap and water. Immediate medical attention is required. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Discard contaminated shoes, belts, and other articles made of leather.

Eye contact: Rinse immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Ingestion: Drink 1 or 2 glasses of water. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: MATERIAL IS CORROSIVE. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock and convulsions maybe necessary.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media: no data available

Special hazards arising from the substance or mixture

Hazardous combustion products: no data available

Unusual Fire and Explosion Hazards: Combustion generates toxic fumes of the following: hydrogen chloride Nitrogen oxides (NOx) sulfur oxides

Advice for firefighters

Fire Fighting Procedures: Cool containers/tanks with water spray. Minimize exposure. Do not breathe fumes. Contain run-off.

Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Wear a NIOSH approved (or equivalent) respirator (with organic vapor/acid gas cartridge and a dust/mist filter) during spill clean-ups and deactivation of this material. MATERIAL IS CORROSIVE. Protective clothing, including chemical splash goggles, nitrile or butyl rubber full length gloves, rubber apron, or clothing made of nitrile or butyl rubber, and rubber overshoes must be worn during spill clean-ups and deactivation of this material. If material comes in contact with the skin during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information.

Environmental precautions: Do not allow material to contaminate ground water system. Prevent product from entering drains.

Methods and materials for containment and cleaning up: WARNING: KEEP SPILLS AND CLEAN-UP RESIDUALS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER. Adsorb the spill with spill pillows or inert solids such as clay or vermiculite, and transfer contaminated materials to suitable containers for disposal. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Let stand for 30 minutes. Flush the spill area with copious amounts of water to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add deactivation solution to the waste pail to deactivate the adsorbed material. See Section 13, "Disposal Considerations", for information regarding the disposal of contained materials.

7. HANDLING AND STORAGE

Precautions for safe handling: This material is corrosive. For personal protection see section 8. Do not handle material near food, feed or drinking water.

Conditions for safe storage: Keep in a well-ventilated place. The product as supplied may evolve gas (largely carbon dioxide) slowly. To prevent the buildup of pressure the product is packaged in specially vented containers, where necessary. Keep this product in the original container when not in use. Container must be stored and transported in an upright position to prevent spilling the contents

through the vent, where fitted. Do not store this material in containers made of the following: steel Do not store this material near food, feed or drinking water.
CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied. Expiration date based only on retention of >95% actives during storage at 20°C-25°C (68°F-77°F).

Storage stability

Storage temperature: 1 - 55 °C (34 - 131 °F)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
5-Chloro-2-methyl-4-isothiazolin-3-one	Rohm and Haas	TWA	0.076 mg/m3
	Rohm and Haas	STEL	0.23 mg/m3
2-Methyl-4-isothiazolin-3-one	Rohm and Haas	TWA	1.5 mg/m3
	Rohm and Haas	STEL	4.5 mg/m3

Exposure controls

Engineering controls: Use local exhaust ventilation with a minimum capture velocity of 150 ft/min. (0.75 m/sec.) at the point of dust or mist evolution. Refer to the current edition of "Industrial Ventilation: A Manual of Recommended Practice" published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Individual protection measures

Eye/face protection: Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Butyl-rubber. Nitrile rubber. PVC gloves >1 mm thickness. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. NOTE: Material is a possible skin sensitizer.

Other protection: Wear as appropriate: Chemical resistant apron complete suit protecting against chemicals

Respiratory protection: Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the Exposure Limit Information Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. For concentrations up to 10 times the exposure limit, wear a properly fitted NIOSH approved (or equivalent) half-mask or full facepiece air purifying respirator equipped with organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters. For those unlikely situations where exposure may greatly exceed the listed exposure limits (i.e. greater than 10-fold), or in any emergency situation, wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode or a full facepiece airline

respirator in the pressure demand mode with emergency escape provision. See SECTION 6, Accidental Release Measures, for respirator and protective clothing requirements for spill clean-up and decontamination of this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state	clear liquid
Color	light yellow
Odor	no data available
Odor Threshold	no data available
pH	4 - 4.5
Melting point/range	-2 °C (28 °F)
Freezing point	no data available
Boiling point (760 mmHg)	no data available
Flash point	>100 °C (212 °F) <i>open cup</i>
Evaporation Rate (Butyl Acetate = 1)	no data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapor Pressure	no data available
Relative Vapor Density (air = 1)	no data available
Relative Density (water = 1)	1.05 at 20 °C (68 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	no data available
Decomposition temperature	no data available
Kinematic Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	No Oxidizing
Molecular weight	no data available
Percent volatility	89 - 90 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: no data available

Chemical stability: no data available

Possibility of hazardous reactions: Stable under recommended storage conditions.
Product will not undergo polymerization.

Conditions to avoid: no data available

Incompatible materials: Avoid contact with the following: Oxidizing agents Amines. Reducing agents. Mercaptans.

Hazardous decomposition products: Nitrogen oxides (NOx) Sulphur oxides hydrogen chloride

11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

Acute toxicity

Acute oral toxicity

LD50, Rat, female, 2,000 mg/kg

Acute dermal toxicity

LD50, Rat, > 5,000 mg/kg

Acute inhalation toxicity

LC50, Rat, 4 Hour, 1.69 mg/l

Skin corrosion/irritation

Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Corrosive

Sensitization

May cause sensitisation by skin contact.

Specific Target Organ Systemic Toxicity (Single Exposure)

Product test data not available.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Product test data not available.

Carcinogenicity

Product test data not available.

Teratogenicity

Product test data not available.

Reproductive toxicity

Product test data not available.

Mutagenicity

Product test data not available.

Aspiration Hazard

Product test data not available.

COMPONENTS INFLUENCING TOXICOLOGY:

Bronopol

Specific Target Organ Systemic Toxicity (Single Exposure)

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In animals, effects have been reported on the following organs:

Kidney.

Salivary glands.

May cause nausea and vomiting.

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive toxicity

In animal studies, did not interfere with reproduction in females.

Mutagenicity

In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

Sodium nitrate

Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

In humans, symptoms may include:

May cause central nervous system depression.

May cause dizziness and drowsiness.

Headache.

Incoordination.

Low blood pressure.

May cause methemoglobinemia, thereby impairing the blood's ability to transport oxygen.

Carcinogenicity

Contains materials which may react to form a nitrosamine. Some nitrosamines have been shown to be carcinogenic in laboratory animal

Teratogenicity

Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity

No relevant data found.

Mutagenicity

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

5-Chloro-2-methyl-4-isothiazolin-3-one**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity

Did not cause cancer in laboratory animals.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

2-Methyl-4-isothiazolin-3-one**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Carcinogenicity

Did not cause cancer in laboratory animals.

Teratogenicity

Did not cause birth defects in laboratory animals.

Reproductive toxicity

In animal studies, did not interfere with reproduction.

Mutagenicity

Negative in genetic toxicity tests.

Aspiration Hazard

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Carcinogenicity**Component**

Sodium nitrate

List

IARC

Classification

Group 2A: Probably carcinogenic to humans

12. ECOLOGICAL INFORMATION

Ecotoxicological information on this product or its components appear in this section when such data is available.

General Information

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Toxicity**Bronopol****Acute toxicity to fish**

Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50, Lepomis macrochirus (Bluegill sunfish), flow-through test, 96 Hour, 11 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 1.4 mg/l, OECD Test Guideline 202 or Equivalent

EC50, eastern oyster (Crassostrea virginica), 96 Hour, 0.77 mg/l

Acute toxicity to algae/aquatic plants

ErC50, blue-green alga Anabaena flos-aquae, Static, 72 Hour, Growth rate inhibition, 0.068 mg/l, OECD Test Guideline 201 or Equivalent

NOEC, blue-green alga Anabaena flos-aquae, Static, 72 Hour, Growth rate inhibition, 0.025 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), flow-through test, 21 d, 0.06 mg/l

Toxicity to Above Ground Organisms

Material is slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).

oral LD50, Anas platyrhynchos (Mallard duck), 510 mg/kg

Sodium nitrate

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 4,650 - 6,000 mg/l, Method Not Specified.

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), Static, 24 Hour, 8,609 mg/l, OECD Test Guideline 202

5-Chloro-2-methyl-4-isothiazolin-3-one

Acute toxicity to fish

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Rainbow trout (Oncorhynchus mykiss), 96 Hour, 0.19 mg/l, OECD Test Guideline 203 or Equivalent
LC50, Bluegill sunfish (Lepomis macrochirus), 96 Hour, 0.28 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna, 48 Hour, 0.16 mg/l

Acute toxicity to algae/aquatic plants

NOEC, Selenastrum capricornutum (green algae), Growth rate, 0.0099 mg/l
EC50, Algae (Selenastrum capricornutum), 72 Hour, Growth rate, 0.018 mg/l

Toxicity to bacteria

EC50, Bacteria, 16 Hour, 5.7 mg/l

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, number of offspring, 0.172000 mg/l
LOEC, Daphnia magna (Water flea), 21 d, number of offspring, 0.572000 mg/l

2-Methyl-4-isothiazolin-3-one

Acute toxicity to fish

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 4.77 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, 0.93 - 1.9 mg/l

Acute toxicity to algae/aquatic plants

EC50, Algae (Selenastrum capricornutum), 72 Hour, Growth rate, 0.158 mg/l, OECD Test Guideline 201

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna, 21 d, 0.04 mg/l

Persistence and degradability

Bronopol

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

10-day Window: Fail

Biodegradation: 51 - 57 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Not applicable

Biodegradation: 99 %

Exposure time: 1 hrs

Method: Simulation study

Theoretical Oxygen Demand: 0.56 mg/mg

Chemical Oxygen Demand: 0.56 - 0.61 mg/mg

Sodium nitrate

Biodegradability: Biodegradation is not applicable.

5-Chloro-2-methyl-4-isothiazolin-3-one

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Not applicable

Biodegradation: 98 %

Exposure time: 2 d

Method: OECD Test Guideline 302B or Equivalent

2-Methyl-4-isothiazolin-3-one

Biodegradability: Material is expected to be readily biodegradable.

Biodegradation: 98 %

Exposure time: 48 d

Method: Simulation study

Bioaccumulative potential

Bronopol

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.64 Estimated.

Sodium nitrate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.79 Estimated.

5-Chloro-2-methyl-4-isothiazolin-3-one

Partition coefficient: n-octanol/water(log Pow): -0.71 - 0.75 Measured

2-Methyl-4-isothiazolin-3-one

Bioaccumulation: Does not bioaccumulate. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.75 Measured

Mobility in soil

Bronopol

Potential for mobility in soil is very high (Koc between 0 and 50).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient(Koc): 10 Estimated.

Sodium nitrate

No relevant data found.

5-Chloro-2-methyl-4-isothiazolin-3-one

No relevant data found.

2-Methyl-4-isothiazolin-3-one

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations. (See 40 CFR 268)

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Corrosive liquid, acidic, organic, n.o.s.(5-Chloro-2-methyl-4-isothiazolin-3-one)
UN number	UN 3265
Class	8
Packing group	II

Classification for SEA transport (IMO-IMDG):

Proper shipping name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(5-Chloro-2-methyl-4-isothiazolin-3-one)
UN number	UN 3265
Class	8
Packing group	II
Marine pollutant	5-Chloro-2-methyl-4-isothiazolin-3-one
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Corrosive liquid, acidic, organic, n.o.s.(5-Chloro-2-methyl-4-isothiazolin-3-one)
UN number	UN 3265
Class	8
Packing group	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Acute Health Hazard

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 707-315

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

Corrosive

Causes irreversible eye damage

Causes skin burns

Harmful if swallowed or inhaled

This chemical is toxic to fish and aquatic invertebrates.

16. OTHER INFORMATION

Hazard Rating System**HMIS**

Health	Flammability	Physical Hazard
3	1	0

Revision

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Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

Rohm and Haas	Rohm and Haas OEL's
STEL	Short Term Exposure Limit (STEL):
TWA	Time Weighted Average (TWA):

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY* urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.