



Be Right™

SAFETY DATA SHEET

Issue Date 25-Jan-2021

Revision Date
08-Feb-2022

Version 7.5

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1. IDENTIFICATION

Product identifier

Product Name StablCal® Standard, 1.0 NTU

Other means of identification

Product Code(s) 2659849

Safety data sheet number M01360

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use. Standard solution.

Uses advised against Consumer use.

Restrictions on use For Laboratory Use Only.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---------------------------|------------|
| Respiratory sensitization | Category 1 |
| Skin sensitization | Category 1 |

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

Danger



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Hazard statements

H317 - May cause an allergic skin reaction

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P285 - In case of inadequate ventilation wear respiratory protection

P304 + P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

P501 - Dispose of contents/ container to an approved waste disposal plant

P272 - Contaminated work clothing should not be allowed out of the workplace

P280 - Wear protective gloves, protective clothing, eye protection, and face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P363 - Wash contaminated clothing before reuse

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Family

Mixture.

Chemical nature

Aqueous solution of organic salts and polymers.

Percent ranges are used where confidential product information is applicable.

| Chemical name | CAS No | Percent Range | HMRIC # |
|--|-----------|---------------|---------|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane | 100-97-0 | <10% | - |
| Sodium sulfate | 7757-82-6 | <1% | - |
| Formaldehyde | 50-00-0 | <0.1% | - |
| Diammonium sulfate | 7783-20-2 | <0.01% | - |

4. FIRST AID MEASURES

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance.

Inhalation

May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Get immediate medical advice/attention.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact

Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.

Ingestion

May produce an allergic reaction. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Symptoms May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/or wheezing. Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Note to physicians May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact.

Hazardous combustion products This material will not burn. Ammonia. Carbon monoxide. Formaldehyde. Nitrogen oxides (NOx).

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH |
|--|---|--|---|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane CAS#: 100-97-0 | TWA: 1 mg/m ³ inhalable fraction and vapor | NDF | NDF |
| Formaldehyde CAS#: 50-00-0 | STEL: 0.3 ppm TWA: 0.1 ppm | TWA: 0.75 ppm (vacated) TWA: 3 ppm (vacated) STEL: 10 ppm (vacated) Ceiling: 5 ppm STEL: 2 ppm | IDLH: 20 ppm Ceiling: 0.1 ppm 15 min TWA: 0.016 ppm |

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Wear breathing apparatus if exposed to vapors/dusts/aerosols.

Hand Protection Wear suitable gloves. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374-1:2016.

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

Skin and body protection Wear suitable protective clothing.

General Hygiene Considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do

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not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|-----------------------|-----------------|
| Physical state | Liquid |
| Appearance | Turbid solution |
| Color | Milky white |
| Odor | Odorless |
| Odor threshold | Not applicable |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|--|-------------------------|
| Molecular weight | Not applicable | |
| pH | 8.14 | @ 20 °C |
| Melting point/freezing point | 0 °C / 32 °F | |
| Boiling point / boiling range | 100 °C / 212 °F | |
| Evaporation rate | 1 (water = 1) | |
| Vapor pressure | 17.477 mm Hg / 2.33 kPa at 20 °C / 68 °F | |
| Relative vapor density | 0.62 | |
| Specific gravity (water = 1 / air = 1) | 1.02 | |
| Partition Coefficient (n-octanol/water) | No data available | |
| Soil Organic Carbon-Water Partition Coefficient | No data available | |
| Autoignition temperature | No data available | |
| Decomposition temperature | No data available | |
| Dynamic viscosity | No data available | |
| Kinematic viscosity | No data available | |

Solubility(ies)

Water solubility

| <u>Water solubility classification</u> | <u>Water solubility</u> | <u>Water Solubility Temperature</u> |
|--|-------------------------|-------------------------------------|
| Soluble | > 1000 mg/L | 25 °C / 77 °F |

Solubility in other solvents

| <u>Chemical Name</u> | <u>Solubility classification</u> | <u>Solubility</u> | <u>Solubility Temperature</u> |
|----------------------|----------------------------------|-------------------|-------------------------------|
| Acid | Soluble | > 1000 mg/L | 25 °C / 77 °F |

Other information

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Metal Corrosivity

Steel Corrosion Rate No data available
Aluminum Corrosion Rate No data available

Volatile Organic Compounds (VOC) Content

No information available See ingredients information below

| Chemical name | CAS No | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|--|-----------|--|---------------------|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane | 100-97-0 | Not applicable | X |
| Sodium sulfate | 7757-82-6 | No data available | - |
| Formaldehyde | 50-00-0 | No data available | X |
| Diammonium sulfate | 7783-20-2 | No data available | - |

Explosive properties

Upper explosion limit Not applicable
Lower explosion limit Not applicable

Flammable properties

Flash point No data available

Flammability Limit in Air

Upper flammability limit: No data available
Lower flammability limit: No data available

Oxidizing properties

No data available.

Bulk density

Not applicable

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products

Ammonia. Carbon monoxide. Formaldehyde. Nitrogen oxides. Sodium oxides. Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

- Inhalation** May cause sensitization in susceptible persons.
- Eye contact** No known effect based on information supplied.
- Skin contact** Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitization by skin contact.
- Ingestion** May cause additional affects as listed under "Inhalation".

Symptoms Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/ or wheezing. Itching. Rashes. Hives.

Acute toxicity

Based on available data, the classification criteria are not met

Product Acute Toxicity Data

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|----------------------|---------------|---------------|-----------------------|---|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Rat LD ₅₀ | 100 mg/kg | None reported | None reported | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |
| Diammonium sulfate (<0.01%) CAS#: 7783-20-2 | Rat LD ₅₀ | 2840 mg/kg | None reported | None reported | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |

Dermal Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---------------------------------------|-------------------------|---------------|---------------|-----------------------|---|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Rabbit LD ₅₀ | 270 mg/kg | None reported | None reported | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |

Inhalation (Dust/Mist) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---------------|---------------|---------------|---------------|-----------------------|--|
| Formaldehyde | Rat | 0.578 mg/L | 4 hours | None reported | LOLI |

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| | | | | | |
|--------------------------|------------------|--|--|--|--|
| (<0.1%) CAS#: 50-00-0 | LC ₅₀ | | | | |
|--------------------------|------------------|--|--|--|--|

Unknown Acute Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

| | |
|--------------------------------------|--------------------------|
| ATEmix (oral) | No information available |
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

Skin corrosion/irritation

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

Product Skin Corrosion/Irritation Data

No data available.

Ingredient Skin Corrosion/Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|--|---------|---------------|---------------|-------------------------------------|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (<10%) CAS#: 100-97-0 | OECD Test 404: Acute Dermal Corrosion/Irritation | Rabbit | 500 mg | 4 hours | Not corrosive or irritating to skin | ECHA (The European Chemicals Agency) |
| Sodium sulfate (<1%) CAS#: 7757-82-6 | Standard Draize Test | Rabbit | 500 mg | 4 hours | Not corrosive or irritating to skin | ECHA (The European Chemicals Agency) |
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Standard Draize Test | Human | 0.150 mg | 72 hours | Corrosive to skin | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Diammonium sulfate (<0.01%) CAS#: 7783-20-2 | Standard Draize Test | Rabbit | 800 mg | 20 hours | Not corrosive or irritating to skin | ECHA (The European Chemicals Agency) |

Serious eye damage/irritation

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

Product Serious Eye Damage/Eye Irritation Data

No data available.

Ingredient Eye Damage/Eye Irritation Data

Test data reported below.

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|---|---------|---------------|---------------|-------------------------------------|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (<10%) | OECD Test 405: Acute Eye Corrosion/Irritation | Rabbit | 100 mg | 24 hours | Not corrosive or irritating to eyes | ECHA (The European Chemicals Agency) |

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| | | | | | | |
|--|----------------------|--------|----------|---------------|-------------------------------------|--|
| CAS#: 100-97-0 | | | | | | |
| Sodium sulfate (<1%) CAS#: 7757-82-6 | Standard Draize Test | Rabbit | 90 mg | 24 hours | Not corrosive or irritating to eyes | ECHA (The European Chemicals Agency) |
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Rinse Test | Human | 1 ppm | 6 minutes | Corrosive to eyes | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Diammonium sulfate (<0.01%) CAS#: 7783-20-2 | Standard Draize Test | Rabbit | 0.050 mL | None reported | Not corrosive or irritating to eyes | ECHA (The European Chemicals Agency) |

Respiratory or skin sensitization

May cause sensitization by inhalation. May cause sensitization by skin contact.

Product Sensitization Data

No data available.

Ingredient Sensitization Data

Test data reported below.

Skin Sensitization Exposure Route

| Chemical name | Test method | Species | Results | Key literature references and sources for data |
|---|---------------------------------------|------------|---------------------------------------|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (<10%) CAS#: 100-97-0 | OECD Test No. 406: Skin Sensitization | Guinea pig | Confirmed to be a skin sensitizer | ECHA (The European Chemicals Agency) |
| Sodium sulfate (<1%) CAS#: 7757-82-6 | OECD Test No. 406: Skin Sensitization | Guinea pig | Not confirmed to be a skin sensitizer | HSDB (Hazardous Substances Data Bank) |
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Patch test | Human | Confirmed to be a skin sensitizer | ERMA (New Zealand's Environmental Risk Management Authority) |

Respiratory Sensitization Exposure Route

| Chemical name | Test method | Species | Results | Key literature references and sources for data |
|---|-----------------------------------|------------|--|---|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (<10%) CAS#: 100-97-0 | Based on human experience | Human | Confirmed to be a respiratory sensitizer | HSDB (Hazardous Substances Data Bank) |
| Formaldehyde (<0.1%) CAS#: 50-00-0 | IgE Specific Immune Response Test | Guinea pig | Confirmed to be a respiratory sensitizer | CICAD (Concise International Chemical Assessment Documents) |

STOT - single exposure

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

Product Specific Target Organ Toxicity Single Exposure Data

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---|---------------------------|---------------|---------------|---|--|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Human LD _{Lo} | 70 mg/kg | None reported | Gastrointestinal Kidney, Ureter, or Bladder Liver Other changes Ulcerated stomach Other changes | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Diammonium sulfate (<0.01%) CAS#: 7783-20-2 | Man TD _{Lo} | 1500 mg/kg | None reported | Gastrointestinal Gas | RTECS (Registry of Toxic Effects of Chemical Substances) |

STOT - repeated exposure

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

Product Specific Target Organ Toxicity Repeat Dose Data

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|---------------|---------------|---------------|-----------------------|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (<10%) CAS#: 100-97-0 | Rat NOAEL | 80 mg/kg | None reported | None reported | Vendor SDS |

Inhalation (Dust/Mist) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|-----------------------|---------------|--|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (<10%) CAS#: 100-97-0 | Rat TC _{Lo} | 350 mg/m ³ | 21 days | Kidney, Ureter, or Bladder Urine volume decreased or anuria Nutritional and Gross Metabolic Weight loss or decreased weight gain Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Vapor) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|---------------------------|---------------|---------------|--|--|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Human TC _{Lo} | 0.017 mg/L | 0.5 days | Eye Lungs, Thorax, or Respiration Lacrimation Other changes | RTECS (Registry of Toxic Effects of Chemical Substances) |

Carcinogenicity

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

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Product Carcinogenicity Data

No data available.

Ingredient Carcinogenicity Data

Test data reported below.

| Chemical name | CAS No | ACGIH | IARC | NTP | OSHA |
|--|-----------|-------|---------|-------|------|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane | 100-97-0 | - | - | - | - |
| Sodium sulfate | 7757-82-6 | - | - | - | - |
| Formaldehyde | 50-00-0 | A1 | Group 1 | Known | X |
| Diammonium sulfate | 7783-20-2 | - | - | - | - |

Legend

| | |
|---|----------------------------------|
| ACGIH (American Conference of Governmental Industrial Hygienists) | A2 - Suspected Human Carcinogen |
| IARC (International Agency for Research on Cancer) | Group 1 - Carcinogenic to Humans |
| NTP (National Toxicology Program) | Known - Known Carcinogen |
| OSHA (Occupational Safety and Health Administration of the US Department of Labor) | X - Present |

Inhalation (Vapor) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|---------------------------------------|---------------|---------------|---------------|-----------------------|--|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Rat | 15 mg/L | 78 weeks | Olfaction Tumors | RTECS (Registry of Toxic Effects of Chemical Substances) |

Germ cell mutagenicity

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

Product Germ Cell Mutagenicity invitro Data

No data available.

Ingredient Germ Cell Mutagenicity invitro Data

Test data reported below.

| Chemical name | Test | Cell Strain | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|----------------------|-----------------|---------------|---------------|---------------------------------------|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane (<10%) CAS#: 100-97-0 | Cytogenetic analysis | Human HeLa Cell | 1 mmol/L | None reported | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |

Product Germ Cell Mutagenicity invivo Data

No data available.

Ingredient Germ Cell Mutagenicity invivo Data

Test data reported below.

Oral Exposure Route

| Chemical name | Test | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|--|----------------------|---------|---------------|---------------|---------------------------------------|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane | Dominant lethal test | Mouse | 25000 mg/kg | None reported | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |

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| | | | | | | |
|-------------------------------|--|--|--|--|--|-------------------------|
| e (<10%) CAS#: 100-97-0 | | | | | | Chemical Substances) |
|-------------------------------|--|--|--|--|--|-------------------------|

Inhalation (Vapor) Exposure Route

| Chemical name | Test | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|--|-------------------|---------|---------------|---------------|---------------------------------------|--|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Micronucleus test | Human | .000985 mg/L | 8.5 years | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |

Reproductive toxicity

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

Product Reproductive Toxicity Data

No data available.

Ingredient Reproductive Toxicity Data

Test data reported below.

Oral Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|---------------------------|---------------|---------------|---|--|
| Sodium sulfate (<1%) CAS#: 7757-82-6 | Mouse TD _{Lo} | 14000 mg/kg | 4 days | Effects on Newborn Other neonatal measures or effects | RTECS (Registry of Toxic Effects of Chemical Substances) |

Inhalation (Vapor) Exposure Route

| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|-------------------------|---------------|---------------|---|--|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Rat TC _{Lo} | 40 mg/L | 14 days | Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus) | RTECS (Registry of Toxic Effects of Chemical Substances) |

Aspiration hazard

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Unknown aquatic toxicity

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Product Ecological Data

Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Ingredient Ecological Data

Aquatic Acute Toxicity

Test data reported below.

Fish

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|----------------------------|------------------|---------------|---|
| Sodium sulfate (<1%) CAS#: 7757-82-6 | 96 hours | None reported | LC ₅₀ | 56 mg/L | IUCLID (The International Uniform Chemical Information Database) |
| Formaldehyde (<0.1%) CAS#: 50-00-0 | 96 hours | <i>Morone saxatilis</i> | LC ₅₀ | 6.7 mg/L | PEEN (Pan European Ecological Network) |
| Diammonium sulfate (<0.01%) CAS#: 7783-20-2 | 96 hours | <i>Oncorhynchus mykiss</i> | LC ₅₀ | 36.7 mg/L | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |

Crustacea

| Chemical name | Exposure time | Species | Endpoint type | Reported dose | Key literature references and sources for data |
|--|---------------|----------------------|------------------|---------------|---|
| Sodium sulfate (<1%) CAS#: 7757-82-6 | 48 Hours | <i>Daphnia magna</i> | EC ₅₀ | 3150 mg/L | IUCLID (The International Uniform Chemical Information Database) |
| Formaldehyde (<0.1%) CAS#: 50-00-0 | 48 Hours | <i>Daphnia pulex</i> | EC ₅₀ | 5.8 mg/L | PEEN (Pan European Ecological Network) |
| Diammonium sulfate (<0.01%) CAS#: 7783-20-2 | 48 Hours | None reported | LC ₅₀ | 14 mg/L | GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance) |

Aquatic Chronic Toxicity

No data available.

Persistence and degradability

Product Biodegradability Data

No data available.

Product Bioaccumulation Data

No data available.

Partition Coefficient (n-octanol/water)

No data available

Mobility

Soil Organic Carbon-Water Partition Coefficient

No data available

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

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Contaminated packaging Do not reuse empty containers.

US EPA Waste Number U122

| Chemical name | RCRA | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|-------------------------|------|---|------------------------|------------------------|
| Formaldehyde 50-00-0 | U122 | Included in waste streams: K009, K010, K038, K040, K156, K157 | - | U122 |

14. TRANSPORT INFORMATION

DOT Not regulated
Special Provisions

TDG Not regulated

IATA Not regulated

IMDG Not regulated

Note: No special precautions necessary.

Additional information

15. REGULATORY INFORMATION

National Inventories

TSCA Complies
DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

EINECS/ELINCS Complies
ENCS Does not comply
IECSC Complies
KECL - Existing substances Complies
PICCS Does not comply
TCSI Complies
AICS Complies
NZIoC Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical name | SARA 313 - Threshold Values % |
|---------------------------------------|-------------------------------|
| Formaldehyde (CAS #: 50-00-0) | 0.1 |
| Diammonium sulfate (CAS #: 7783-20-2) | 1.0 |

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|-----|
| Acute health hazard | Yes |
| Chronic Health Hazard | Yes |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|-------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Formaldehyde 50-00-0 | 100 lb | - | - | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

| Chemical name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|-------------------------|--------------------------|----------------|---|
| Formaldehyde 50-00-0 | 100 lb | 100 lb | RQ 100 lb final RQ RQ 45.4 kg final RQ |

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

| Chemical name | U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues |
|--|---|
| Formaldehyde (<0.1%) CAS#: 50-00-0 | Release - Toxic (solution) |

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

| Chemical name | California Proposition 65 |
|-------------------------------|---------------------------|
| Formaldehyde (CAS #: 50-00-0) | Carcinogen |



WARNING: This product can expose you to chemicals including Formaldehyde, which is known to the State of California to cause cancer.

For more information, go to <http://www.P65Warnings.ca.gov>

IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|------------------------------------|------------|---------------|--------------|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1](| X | - | - |

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| | | | |
|---------------------------------|---|---|---|
| 3,7)]decane 100-97-0 | | | |
| Sodium sulfate 7757-82-6 | - | X | X |
| Formaldehyde 50-00-0 | X | X | X |
| Diammonium sulfate 7783-20-2 | - | X | X |

U.S. EPA Label Information

| Chemical name | FIFRA | FDA |
|--|----------|-----------------|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane | 180.0910 | - |
| Sodium sulfate | - | 21 CFR 186.1797 |
| Diammonium sulfate | 180.0910 | 21 CFR 184.1143 |

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

| Chemical name | Global Automotive Declarable Substance List Classifications | Global Automotive Declarable Substance List Thresholds |
|--|--|--|
| 1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane 100-97-0 | Declarable Substance (FI) | 0.1 % |
| Formaldehyde 50-00-0 | Declarable Substance (FI) Prohibited Substance (FI) Declarable Substance (LR) Prohibited Substance (LR) | 0 % 0.1 % |

NFPA and HMIS Classifications

| | | | | |
|-------------|----------------------------------|-------------------------|-----------------------------|---|
| NFPA | Health hazards - 2 | Flammability - 0 | Instability - 0 | Physical and chemical properties - |
| HMIS | Health hazards - 2 - * | Flammability - 0 | Physical hazards - 0 | Personal protection - X - I |

Key or legend to abbreviations and acronyms used in the safety data sheet

NIOSH IDLH *Immediately Dangerous to Life or Health*
 ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)
 NDF *no data*

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|-----|---------------------------------|---------|---|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| MAC | Maximum Allowable Concentration | Ceiling | Ceiling Limit Value |
| X | Listed | Vacated | These values have no official status. The only binding levels of contaminants are those |

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listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.

| | | | |
|------|---------------------------|------|-----------------------|
| SKN* | Skin designation | SKN+ | Skin sensitization |
| RSP+ | Respiratory sensitization | ** | Hazard Designation |
| C | Carcinogen | R | Reproductive toxicant |
| M | mutagen | | |

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Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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End of Safety Data Sheet