



a member of the Roche Group

Material Safety Data Sheet

Material Name: Jones Silver B

MSDS ID: 00231640

*** Section 1 - Chemical Product and Company Identification ***

Manufacturer Information

VENTANA MEDICAL SYSTEMS INC.
1910 E. Innovation Park Drive
Tucson, AZ 85755
Phone: (520) 887-2155

EMERGENCY TELEPHONE NUMBER:
(800) 424-9300 (USA/Canada)
CHEMTREC: +1 (703) 527-3887 (International)

Material Name: Jones Silver B

Product Number(s)

860-020, 1504075, 5279356001, 06038557001, 860-019, 5279348001

Product Use

clinical/research

*** Section 2 - Hazards Identification ***

NFPA Ratings: Health: 2 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Preparation

R:42/43

Risks

May cause sensitization by inhalation and skin contact.

EMERGENCY OVERVIEW

Color: colorless

Physical Form: liquid

Odor: odorless

Major Health Hazards: respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, allergic reactions, kidney damage

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, cough, sore throat, difficulty breathing, allergic reactions, nausea, vomiting, diarrhea, weakness, drowsiness, fever, headache, irregular heartbeat, tremors, dizziness, loss of coordination, changes in body temperature, bluish skin color, changes in blood pressure, skin disorders, convulsions, kidney damage, coma

Long Term: allergic reactions, loss of voice, weight loss, nausea, vomiting, rash, skin disorders, blood disorders, kidney damage, convulsions, reproductive effects

Skin

Short Term: irritation, allergic reactions, absorption may occur, nausea, vomiting, diarrhea, weakness, drowsiness, fever, headache, irregular heartbeat, tremors, dizziness, loss of coordination, changes in body temperature, bluish skin color, changes in blood pressure, skin disorders, kidney damage, convulsions, coma

Long Term: irritation, allergic reactions, absorption may occur, weight loss, nausea, vomiting, rash, blood disorders, skin disorders, convulsions, kidney damage, reproductive effects

Eye

Short Term: irritation, blurred vision, eye damage

Long Term: irritation

Ingestion

Short Term: irritation, nausea, vomiting, diarrhea, stomach pain, headache, irregular heartbeat, bluish skin color, drowsiness, fever, tremors, weakness, dizziness, loss of coordination, changes in body temperature, changes in blood pressure, skin disorders, kidney damage, convulsions, coma

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Long Term: irritation, rash, nausea, vomiting, diarrhea, stomach pain, weight loss, skin disorders, blood disorders, convulsions, kidney damage, reproductive effects

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

*** Section 3 - Composition/Information on Ingredients ***

| CAS # | Component / EU Number | Percent | Symbol(s) | Risk Phrase(s) |
|---------------|--|---------|-----------|---------------------|
| Not Available | NON-HAZARDOUS | 60-100 | --- | --- |
| 100-97-0 | HEXAMINE 202-905-8 | 10-30 | F | R:11-43 |
| 1303-96-4 | SODIUM BORATE DECAHYDRATE 603-411-9 | 1-5 | T Xn Xi | R:60-61-22-36-37-38 |

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Borax ($\text{B}_4\text{Na}_2\text{O}_7 \cdot 10\text{H}_2\text{O}$) (12447-40-4), Borates, tetra, sodium salts, anhydrous (1330-43-4).

*** Section 4 - First Aid Measures ***

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing before reuse. Get medical attention, if needed.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If a large amount is swallowed, get medical attention.

Note to Physicians

For inhalation, consider oxygen.

*** Section 5 - Fire-Fighting Measures ***

See Section 9 for Flammability Properties

Flammable Properties

Negligible fire hazard.

Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products.

Hazardous Combustion Products

Thermal decomposition or combustion products: oxides of boron, oxides of carbon

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Not sensitive

*** Section 6 - Accidental Release Measures ***

Occupational Spill/Release

Stop leak if possible without personal risk. **Small spills:** Absorb with sand or other non-combustible material.

Collect spilled material in appropriate container for disposal. Keep unnecessary people away, isolate hazard area and deny entry.

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*** Section 7 - Handling and Storage ***

Handling Procedures

Wash thoroughly after handling.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Store between 2 C and 8 C. See original container for storage recommendations. Keep separated from incompatible substances.

*** Section 8 - Exposure Controls/Personal Protection ***

Exposure Limits

HEXAMINE (100-97-0)

Sweden: 3 mg/m3 LLV
5 mg/m3 STV
Sensitizer

SODIUM BORATE DECAHYDRATE (1303-96-4)

ACGIH: 2 mg/m3 TWA (inhalable fraction)
6 mg/m3 STEL (inhalable fraction)

NIOSH: 5 mg/m3 TWA

OSHA: 10 mg/m3 TWA

Belgium: 6 mg/m3 STEL (as borate)
2 mg/m3 TWA (as borate)

Denmark: 2 mg/m3 TWA
Potential for cutaneous absorption

France: 5 mg/m3 VME

Greece: 10 mg/m3 TWA

Ireland: 5 mg/m3 TWA

Portugal: 2 mg/m3 TWA (inhalable fraction)
6 mg/m3 STEL (inhalable fraction)

Spain: 5 mg/m3 VLA-ED

United Kingdom: 15 mg/m3 STEL
5 mg/m3 TWA

Ventilation

Provide adequate ventilation. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Safety glasses or goggles are recommended when there is a potential for eye contact. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing

Lab coat or apron.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Protective Materials

latex, vinyl, nitrile

Respiratory Protection

No respirator is required under normal conditions of use.

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*** Section 9 - Physical and Chemical Properties ***

| | | | |
|--------------------------------|---------------|--------------------------------------|-------------------------|
| Physical State: | Liquid | Appearance: | Clear, colorless liquid |
| Color: | colorless | Physical Form: | liquid |
| Odor: | odorless | Odor Threshold: | Not available |
| pH: | 9.6-9.9 | Melting/Freezing Point: | Not available |
| Boiling Point: | Not available | Decomposition: | Not available |
| Flash Point: | not flammable | Evaporation Rate: | Not available |
| LEL: | Not available | UEL: | Not available |
| Vapor Pressure: | Not available | Vapor Density (air = 1): | Not available |
| Density: | Not available | Specific Gravity (water = 1): | Not available |
| Water Solubility: | miscible | Log KOW: | Not available |
| Coeff. Water/Oil Dist.: | Not available | Auto Ignition: | Not available |
| Viscosity: | Not available | Volatility: | Not available |

*** Section 10 - Stability and Reactivity ***

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Protect from freezing. Keep separated from incompatible substances.

Materials to Avoid

acid anhydrides, potassium

Decomposition Products

Thermal decomposition or combustion products: oxides of boron, oxides of carbon

Possibility of Hazardous Reactions

Will not polymerize.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

HEXAMINE (100-97-0)

Oral LD50 Rat 9200 mg/kg

SODIUM BORATE DECAHYDRATE (1303-96-4)

Oral LD50 Rat 2660 mg/kg

RTECS Acute Toxicity (selected)

The components of this material have been reviewed, and RTECS publishes the following endpoints:

HEXAMINE (100-97-0)

Oral: 569 mg/kg Oral Mouse LD50

SODIUM BORATE DECAHYDRATE (1303-96-4)

Oral: 2660 mg/kg Oral Rat LD50

Acute Toxicity Level

HEXAMINE (100-97-0)

Moderately Toxic: ingestion.

SODIUM BORATE DECAHYDRATE (1303-96-4)

Moderately Toxic: ingestion.

Irritation/Corrosivity

RTECS Irritation

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

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Local Effects

HEXAMINE (100-97-0)

Irritant: inhalation, skin, eye.

SODIUM BORATE DECAHYDRATE (1303-96-4)

Irritant: inhalation, skin, eye.

Target Organs

HEXAMINE (100-97-0)

immune system (sensitizer).

SODIUM BORATE DECAHYDRATE (1303-96-4)

central nervous system, kidneys.

Carcinogenicity

Component Carcinogenicity

SODIUM BORATE DECAHYDRATE (1303-96-4)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

Portugal: A4 - Not Classifiable as a Human Carcinogen

Mutagenic

No information available for the mixture.

RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Reproductive Effects

No information available for the mixture.

RTECS Reproductive Effects

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Tumorigenic

No information available for the mixture.

RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Medical Conditions Aggravated by Exposure

kidney disorders, liver disorders, respiratory disorders, skin disorders

Additional Data

May be excreted in breast milk. Interactions with drugs may occur.

*** Section 12 - Ecological Information ***

Component Analysis - Aquatic Toxicity

HEXAMINE (100-97-0)

Fish: 96 Hr LC50 Pimephales promelas: 44600-55600 mg/L [flow-through]

Invertebrate: 48 Hr EC50 Daphnia magna: 29868 - 43390 mg/L

SODIUM BORATE DECAHYDRATE (1303-96-4)

Fish: 96 Hr LC50 Limanda limanda: 340 mg/L

Algae: 96 Hr EC50 Desmodesmus subspicatus: 158 mg/L; 96 Hr EC50 Pseudokirchneriella subcapitata: 2.6 - 21.8 mg/L [static]

Invertebrate: 48 Hr LC50 Daphnia magna: 1085 - 1402 mg/L

Mobility

No information available for the mixture.

Persistence & Degradation

No information available for the mixture.

Bioaccumulative Potential

No information available for the mixture.

*** Section 13 - Disposal Considerations ***

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

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*** Section 14 - Transport Information ***

US DOT Information

Not regulated.

TDG Information

Not regulated.

ADR Information

Not regulated.

RID Information

Not regulated.

IATA Information

Not regulated.

ICAO Information

Not regulated.

IMDG Information

Not regulated.

*** Section 15 - Regulatory Information ***

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

| Component / EC Number | CAS | CA | MA | MN | NJ | PA | RI |
|---------------------------|-----------|-----|-----|-----|-----|-----|-----|
| HEXAMINE | 100-97-0 | No | No | No | Yes | No | No |
| SODIUM BORATE DECAHYDRATE | 1303-96-4 | Yes | Yes | Yes | Yes | Yes | Yes |

California Proposition 65

Not regulated under California Proposition 65

Canadian Regulations

Canada WHMIS

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

HEXAMINE (100-97-0)

0.1 %

SODIUM BORATE DECAHYDRATE (1303-96-4)

1 %

WHMIS Classification

D2A, D2B.

European Regulations

This preparation has been classified for the European Union according to Annex VI Directives 67/548/EEC and 99/45/EC.

Germany Water Classification

HEXAMINE (100-97-0)

Number 1568, hazard class 1 - low hazard to waters

SODIUM BORATE DECAHYDRATE (1303-96-4)

Number 37, hazard class 1 - low hazard to waters

Component Analysis

SODIUM BORATE DECAHYDRATE (1303-96-4)

Reason_for_inclusion: Toxic for reproduction, Article 57c

EU Marking and Labelling

Risk Phrases

R42/43 May cause sensitization by inhalation and skin contact.

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Safety Phrases

S24 Avoid contact with skin.

S37 Wear suitable gloves.

S38 In case of insufficient ventilation, wear suitable respiratory equipment.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S60 This material and its container must be disposed of as hazardous waste.

Japanese Regulations

Japan Designated Chemical Substances (PRTR Law)

The following components are subject to reporting requirements as specified by the "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management" and are included in the "Pollutant Release and Transfer Register (PRTR)" of designated chemicals.

HEXAMINE (100-97-0)

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Japan Poisonous and Deleterious Substances

No components of this material are specified as poisonous or deleterious substances, as regulated by Japan under the Poisonous and Deleterious Substances Control Law.

Industrial Safety and Health Law - Flammable Materials

No components of this material are specifically identified in Table 6-2 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

Industrial Safety and Health Law - Label Disclosure

No components of this material are specifically required to be indicated on a container label as specified by Article 18 of the Enforcement Order of the Industrial Safety and Health Law.

Industrial Safety and Health Law - Organic Solvents

No components of this material are specifically identified in Table 6-2 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

*** Section 16 - Other Information ***

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Full text of R phrases in Section 3

R11 Highly flammable.

R22 Harmful if swallowed.

R36 Irritating to eyes.

R37 Irritating to respiratory system.

R38 Irritating to skin.

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R43 May cause sensitization by skin contact.

R60 May impair fertility.

R61 May cause harm to the unborn child.

Other Information

Limitations: The information and recommendations set forth in this MSDS are believed to be correct as of this date. Ventana Medical Systems, Inc. makes no warranty with respect to the content of this MSDS and disclaims all liability from reliance thereon.

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