



a member of the Roche Group

## Material Safety Data Sheet

Material Name: ultraView Silver ISH DNP Chromogen B

MSDS ID: VEN-018

### \*\*\* 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:** ultraView Silver ISH DNP Chromogen B

#### Product Number(s)

253-4411, 254-4411, 800-098

#### 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:43

#### Risks

May cause sensitization by skin contact.

#### EMERGENCY OVERVIEW

**Physical Form:** liquid

**Major Health Hazards:** respiratory tract irritation, skin irritation, eye irritation

#### POTENTIAL HEALTH EFFECTS

##### Inhalation

**Short Term:** irritation, cough, allergic reactions, sore throat, difficulty breathing, headache, dizziness

**Long Term:** irritation, tooth decay

##### Skin

**Short Term:** irritation, allergic reactions

**Long Term:** irritation

##### Eye

**Short Term:** irritation

**Long Term:** irritation

##### Ingestion

**Short Term:** gastrointestinal irritation, sore throat, diarrhea, stomach pain

**Long Term:** tooth decay

#### 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 Components | 60-100  | ---       | ---                 |
| 5949-29-1     | Citric acid monohydrate  | 1-5     | Xi        | R:37-38-41          |
| 123-31-9      | Hydroquinone             | <1      | Xn Xi N   | R:22-40-41-43-50-68 |

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## \*\*\* Section 4 - First Aid Measures \*\*\*

### Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. 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.

## \*\*\* 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

oxides of carbon, oxides of sodium

### Sensitivity to Mechanical Impact

Not sensitive

### Sensitivity to Static Discharge

Not sensitive

## \*\*\* Section 6 - Accidental Release Measures \*\*\*

### Occupational Spill/Release

Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.

## \*\*\* Section 7 - Handling and Storage \*\*\*

### Handling Procedures

Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

### Storage Procedures

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

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

### Exposure Limits

#### Hydroquinone (123-31-9)

|                        |  |
|------------------------|--|
| <b>ACGIH:</b>          | 1 mg/m3 TWA<br>Sensitizer  |
| <b>NIOSH:</b>          | 2 mg/m3 Ceiling (15 min)<br>50 mg/m3 IDLH  |
| <b>OSHA:</b>           | 2 mg/m3 TWA<br>2 mg/m3 TWA   |
| <b>Austria:</b>        | 4 mg/m3 STEL (inhalable fraction, 8 X 5 min)<br>2 mg/m3 MAK (inhalable fraction)<br>Sensitizer |
| <b>Belgium:</b>        | 2 mg/m3 TWA  |
| <b>Denmark:</b>        | 2 mg/m3 Ceiling  |
| <b>Finland:</b>        | 2 mg/m3 STEL<br>0.5 mg/m3 TWA  |
| <b>France:</b>         | 2 mg/m3 VME  |
| <b>Greece:</b>         | 4 mg/m3 STEL<br>2 mg/m3 TWA  |
| <b>Ireland:</b>        | 0.5 mg/m3 TWA  |
| <b>Japan:</b>          | Group 2 skin sensitizer  |
| <b>Portugal:</b>       | 2 mg/m3 TWA  |
| <b>Spain:</b>          | 2 mg/m3 VLA-ED<br>sensitizer   |
| <b>Sweden:</b>         | 0.5 mg/m3 LLV<br>1.5 mg/m3 STV<br>Sensitizer   |
| <b>United Kingdom:</b> | 1.5 mg/m3 STEL<br>0.5 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.

#### Respiratory Protection

No respirator is required under normal conditions of use.

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

|                                |               |                                      |               |
|--------------------------------|---------------|--------------------------------------|---------------|
| <b>Physical State:</b>         | Liquid        | <b>Appearance:</b>                   | Clear liquid  |
| <b>Physical Form:</b>          | liquid        | <b>Odor:</b>                         | Not Available |
| <b>Odor Threshold:</b>         | Not available | <b>pH:</b>                           | 3.8           |
| <b>Melting/Freezing Point:</b> | Not available | <b>Boiling Point:</b>                | Not available |
| <b>Flash Point:</b>            | not flammable | <b>Evaporation Rate:</b>             | Not available |
| <b>LEL:</b>                    | Not available | <b>UEL:</b>                          | Not available |
| <b>Vapor Pressure:</b>         | Not available | <b>Vapor Density (air = 1):</b>      | Not available |
| <b>Density:</b>                | Not available | <b>Specific Gravity (water = 1):</b> | Not available |
| <b>Water Solubility:</b>       | miscible      | <b>Coeff. Water/Oil Dist.:</b>       | Not available |
| <b>Auto Ignition:</b>          | Not available | <b>Viscosity:</b>                    | Not available |
| <b>Volatility:</b>             | Not available |                                      |               |

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## \*\*\* Section 10 - Stability and Reactivity \*\*\*

### Chemical Stability

Stable at normal temperatures and pressure.

### Conditions to Avoid

None reported.

### Materials to Avoid

None known.

### Decomposition Products

oxides of carbon, oxides of sodium

### 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:

#### Hydroquinone (123-31-9)

Oral LD50 Rat 320 mg/kg; Dermal LD50 Rat >900 mg/kg

#### RTECS Acute Toxicity (selected)

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

#### Citric acid monohydrate (5949-29-1)

Oral: 5790 mg/kg Oral Mouse LD50

#### Hydroquinone (123-31-9)

Oral: 367.3 mg/kg Oral Rat LD50; 302 mg/kg Oral Rat LD50; 320 mg/kg Oral Rat LD50

Skin: >2000 mg/kg/24 hour Skin Rabbit LD50

#### Acute Toxicity Level

#### Hydroquinone (123-31-9)

Toxic: ingestion.

Slightly Toxic: dermal absorption.

#### Irritation/Corrosivity

This material may cause respiratory tract irritation, skin irritation, and eye irritation.

#### RTECS Irritation

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

#### Citric acid monohydrate (5949-29-1)

5 mg/30 second(s) Eyes Rabbit mild

#### Hydroquinone (123-31-9)

3 percent Skin Human; 2 percent Skin Human mild; 5 percent Skin Human severe

#### Local Effects

#### Citric acid monohydrate (5949-29-1)

Irritant: inhalation, skin.

Corrosive: eye.

#### Hydroquinone (123-31-9)

Irritant: inhalation, skin, eye.

#### Target Organs

#### Hydroquinone (123-31-9)

immune system (sensitizer).

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## Carcinogenicity

### Component Carcinogenicity

#### Hydroquinone (123-31-9)

**ACGIH:** A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans  
**IARC:** Monograph 71 [1999]; Supplement 7 [1987]; Monograph 15 [1977] (Group 3 (not classifiable))  
**Denmark:** Present  
**France:** Carcinogen category 3  
**Germany:** Category 2 (considered to be carcinogenic for man)  
**Italy:** Category 3 Carcinogen  
**Portugal:** A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

## Mutagenic

No data 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 data 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 data 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

blood system disorders, hormonal disorders, kidney disorders

## \*\*\* Section 12 - Ecological Information \*\*\*

### Component Analysis - Aquatic Toxicity

#### Hydroquinone (123-31-9)

**Fish:** 96 Hr LC50 Oncorhynchus mykiss: 0.044 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 0.044 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 0.1-0.18 mg/L [static]; 96 Hr LC50 Brachydanio rerio: 0.17 mg/L

**Algae:** 120 Hr EC50 Desmodesmus subspicatus: 13.5 mg/L; 72 Hr EC50 Pseudokirchneriella subcapitata: 0.335 mg/L

**Invertebrate:** 48 Hr EC50 Daphnia magna: 0.29 mg/L

## Mobility

No data available for the mixture.

## Persistence & Degradation

No data available for the mixture.

## Bioaccumulative Potential

No data 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

This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

#### Hydroquinone (123-31-9)

**SARA 302/304:** 500 lb lower TPQ; 10000 lb upper TPQ  
100 lb EPCRA RQ

**SARA 313:** 1.0 % de minimis concentration

**CERCLA:** 100 lb final RQ; 45.4 kg final RQ

### SARA 311/312

**Acute Health:** Yes **Chronic Health:** No **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  |
|-----------------------|----------|-----|-----|-----|-----|-----|-----|
| Hydroquinone          | 123-31-9 | Yes | Yes | Yes | Yes | Yes | Yes |

### California Proposition 65

Not regulated under California Proposition 65

### Canadian Regulations

### WHMIS Classification

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

#### Hydroquinone (123-31-9)

Number 128, hazard class 3 - severe hazard to waters

### EU Marking and Labelling

#### Risk Phrases

**R43** May cause sensitization by skin contact.

#### EU Symbols

**Xi** Irritant

#### Safety Phrases

**S24** Avoid contact with skin.

**S37** Wear suitable gloves.

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## 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.

#### Hydroquinone (123-31-9)

336

### 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

- R22 Harmful if swallowed.
- R37 Irritating to respiratory system.
- R38 Irritating to skin.
- R40 Limited evidence of a carcinogenic effect.
- R41 Risk of serious damage to eyes.
- R43 May cause sensitization by skin contact.
- R50 Very toxic to aquatic organisms.
- R68 Possible risk of irreversible effects.

### Other Information

Limitations: The information and recommendations set forth in this MSDS are believed to be

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**New MSDS:** 6/15/2009

**MSDS Update:** 6/7/2010

End of Sheet VEN-018