a member of the Roche Group

Material Safety Data Sheet

Material Name: Steiner II Enhancer **MSDS ID: VEN-149**

* * * 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: Steiner II Enhancer

Product Number(s)

1504633, 06521029001, 860-030, 06521894001

Product Use

clinical

* * * Section 2 - Hazards Identification* * *

NFPA Ratings: Health: 2 **Fire:** 3 **Reactivity:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Preparation

F,Xi,Xn; R:11-20/21/22-68/20/21/22-43-52/53

Risks

Highly flammable.
Harmful by inhalation, in contact with skin and if swallowed.
May cause sensitization by skin contact.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

EMERGENCY OVERVIEW

Color: colorless
Physical Form: liquid
Odor: alcohol odor
Major Health Hazards: respiratory tract irritation, skin irritation, eye irritation, liver damage, central nervous system depression, nerve damage, allergic reactions
Physical Hazards: Flammable liquid and vapor. Flash back hazard.

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: cough, irritation, changes in blood pressure, ringing in the ears, nausea, vomiting, constipation, stomach pain, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, hallucinations, tingling sensation, pain in extremities, tremors, loss of coordination, internal bleeding, blood disorders, kidney damage, nerve damage, unconsciousness, coma
Long Term: irritation, sensitivity to light, changes in blood pressure, nausea, vomiting, diarrhea, stomach pain, difficulty breathing, irregular heartbeat, headache, drowsiness, fatigue, dizziness, disorientation, pain in extremities, tremors, loss of coordination, visual disturbances, dilated pupils or pin-point pupils, blindness, bluish skin color, lung congestion, heart damage, kidney damage, liver damage, nerve damage, reproductive effects, effects on the brain, convulsions, unconsciousness, coma

Skin

Short Term: irritation, allergic reactions, absorption may occur, changes in blood pressure, ringing in the ears, nausea, vomiting, constipation, stomach pain, chest pain, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, disorientation, hallucinations, tingling sensation, pain in extremities, tremors, loss of coordination, internal bleeding, blood disorders, kidney damage, nerve damage, unconsciousness, coma
Long Term: irritation, allergic reactions, absorption may occur, headache, drowsiness, dizziness, loss of coordination, blood disorders, nerve damage

Eye

Short Term: irritation, eye damage
Long Term: irritation, eye damage

Ingestion

Short Term: irritation, changes in body temperature, nausea, vomiting, diarrhea, digestive disorders, irregular heartbeat, headache, drowsiness, dizziness, loss of coordination, disorientation, visual disturbances, dilated pupils, bluish skin color, convulsions, coma
Long Term: irritation, changes in blood pressure, diarrhea, loss of appetite, weight loss, irregular heartbeat, headache, drowsiness, dizziness, disorientation, pain in extremities, tremors, loss of coordination, visual disturbances, blindness, bluish skin color, blood disorders, heart damage, kidney damage, liver damage, nerve damage, reproductive effects, birth defects, brain damage

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)
Mixture	Reagent Alcohol	60-100	---	---
64-17-5	Ethyl alcohol (Part of Reagent Alcohol) 200-578-6	60-100	F	R:11
61789-92-2	Mastic gum 263-098-6	1-5	Xn N	R:10-43-51/53-65
67-63-0	Isopropyl alcohol (Part of Reagent Alcohol) 200-661-7	1-5	F Xi	R:11-36-67
67-56-1	Methyl alcohol (Part of Reagent Alcohol) 200-659-6	1-5	F T	R:11-23/24/25-39/23/24/25

* * * 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 swallowed, get medical attention.

Note to Physicians

For inhalation, consider oxygen.

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

See Section 9 for Flammability Properties

Flammable Properties

Severe fire hazard. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

Extinguishing Media

carbon dioxide, regular dry chemical, water spray, alcohol resistant foam

Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Avoid inhalation of material or combustion by-products.

Hazardous Combustion Products

Thermal decomposition or combustion products: oxides of carbon

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Yes

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

Occupational Spill/Release

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.

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

Handling Procedures

Wash thoroughly after handling.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. See original container for storage recommendations. Keep separated from incompatible substances.

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

Exposure Limits

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

ACGIH:	1000 ppm STEL
NIOSH:	1000 ppm TWA; 1900 mg/m3 TWA 3300 ppm IDLH (10% LEL)
OSHA:	1000 ppm TWA; 1900 mg/m3 TWA 1000 ppm TWA; 1900 mg/m3 TWA
Austria:	2000 ppm STEL (3 X 60 min); 3800 mg/m3 STEL (3 X 60 min) 1000 ppm TWA; 1900 mg/m3 TWA
Belgium:	1000 ppm TWA; 1907 mg/m3 TWA
Denmark:	1000 ppm TWA; 1900 mg/m3 TWA
Finland:	1300 ppm STEL; 2500 mg/m3 STEL 1000 ppm TWA; 1900 mg/m3 TWA
France:	5000 ppm STEL; 9500 mg/m3 STEL 1000 ppm TWA; 1900 mg/m3 TWA
Germany:	500 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 2); 960 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 2)
Germany (DFG):	500 ppm TWA MAK; 960 mg/m3 TWA MAK 1000 ppm Peak; 1920 mg/m3 Peak
Greece:	1000 ppm TWA; 1900 mg/m3 TWA
Ireland:	1000 ppm TWA; 1900 mg/m3 TWA
Netherlands:	1900 mg/m3 STEL 260 mg/m3 TWA skin notation
Portugal:	1000 ppm TWA [VLE-MP]
Spain:	1000 ppm TWA [VLA-ED] (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary o biocide compound); 1910 mg/m3 TWA [VLA-ED] (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary o biocide compound)
Sweden:	500 ppm LLV; 1000 mg/m3 LLV 1000 ppm STV; 1900 mg/m3 STV
United Kingdom:	3000 ppm STEL (calculated); 5760 mg/m3 STEL (calculated) 1000 ppm TWA; 1920 mg/m3 TWA

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

ACGIH:	200 ppm TWA 250 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route 15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)
NIOSH:	200 ppm TWA; 260 mg/m3 TWA 250 ppm STEL; 325 mg/m3 STEL Potential for dermal absorption 6000 ppm IDLH
OSHA:	200 ppm TWA; 260 mg/m3 TWA 250 ppm STEL; 325 mg/m3 STEL Prevent or reduce skin absorption 200 ppm TWA; 260 mg/m3 TWA
EEC:	200 ppm TWA; 260 mg/m3 TWA Possibility of significant uptake through the skin
Austria:	800 ppm STEL (4 X 15 min); 1040 mg/m3 STEL (4 X 15 min) 200 ppm TWA; 260 mg/m3 TWA skin notation
Belgium:	250 ppm STEL; 333 mg/m3 STEL 200 ppm TWA; 266 mg/m3 TWA Skin
Denmark:	200 ppm TWA; 260 mg/m3 TWA

Potential for cutaneous absorption
Finland: 250 ppm STEL; 330 mg/m3 STEL
200 ppm TWA; 270 mg/m3 TWA
Potential for cutaneous absorption
France: 1000 ppm STEL; 1300 mg/m3 STEL
200 ppm TWA (restrictive limit); 260 mg/m3 TWA (restrictive limit)
Risk of cutaneous absorption
Germany: 200 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 4); 270 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 4)
skin notation
Germany (DFG): 200 ppm TWA MAK; 270 mg/m3 TWA MAK
800 ppm Peak; 1080 mg/m3 Peak
skin notation
Greece: 250 ppm STEL; 325 mg/m3 STEL
200 ppm TWA; 260 mg/m3 TWA
skin - potential for cutaneous absorption
Ireland: 200 ppm TWA; 260 mg/m3 TWA
Potential for cutaneous absorption
Italy: 200 ppm TWA; 260 mg/m3 TWA
skin - potential for cutaneous absorption
Japan 200 ppm OEL; 260 mg/m3 OEL
May cause substantial skin absorption
Netherlands: 133 mg/m3 TWA; 100 ppm TWA
skin notation
Portugal: 200 ppm TWA [VLE-MP]
250 ppm STEL [VLE-CD
skin - potential for cutaneous exposure
Spain: 200 ppm TWA [VLA-ED] (indicative limit value); 266 mg/m3 TWA [VLA-ED] (indicative limit value)
skin - potential for cutaneous exposure
Sweden: 200 ppm LLV; 250 mg/m3 LLV
250 ppm STV; 350 mg/m3 STV
Skin notation
United Kingdom: 250 ppm STEL; 333 mg/m3 STEL
200 ppm TWA; 266 mg/m3 TWA
Potential for cutaneous absorption

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

ACGIH: 200 ppm TWA
400 ppm STEL
40 mg/L Medium: urine Time: end of shift at end of workweek Parameter: Acetone (background, nonspecific)
NIOSH: 400 ppm TWA; 980 mg/m3 TWA
500 ppm STEL; 1225 mg/m3 STEL
2000 ppm IDLH (10% LEL)
OSHA: 400 ppm TWA; 980 mg/m3 TWA
500 ppm STEL; 1225 mg/m3 STEL
400 ppm TWA; 980 mg/m3 TWA
Austria: 800 ppm STEL (4 X 15 min); 2000 mg/m3 STEL (4 X 15 min); 800 ppm STEL (STEL for large casting, 4 X 30 min); 2000 mg/m3 STEL (STEL for large casting, 4 X 30 min)
200 ppm TWA; 500 mg/m3 TWA (short time value for large casting)
Belgium: 400 ppm STEL; 1000 mg/m3 STEL
200 ppm TWA; 500 mg/m3 TWA
Denmark: 200 ppm TWA; 490 mg/m3 TWA
Finland: 250 ppm STEL; 620 mg/m3 STEL
200 ppm TWA; 500 mg/m3 TWA
France: 400 ppm STEL; 980 mg/m3 STEL
Germany: 200 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 2); 500 mg/m3 TWA AGW (The

	risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, exposure factor 2)
Germany (DFG):	200 ppm TWA MAK; 500 mg/m3 TWA MAK 400 ppm Peak; 1000 mg/m3 Peak
Greece:	500 ppm STEL; 1225 mg/m3 STEL 400 ppm TWA; 980 mg/m3 TWA
Ireland:	400 ppm STEL 200 ppm TWA Potential for cutaneous absorption
Japan	400 ppm Ceiling; 980 mg/m3 Ceiling
Portugal:	200 ppm TWA [VLE-MP] 400 ppm STEL [VLE-CD
Spain:	400 ppm STEL [VLA-EC]; 1000 mg/m3 STEL [VLA-EC] 200 ppm TWA [VLA-ED] (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary o biocide compound); 500 mg/m3 TWA [VLA-ED] (it is prohibited the partial or complete commercialization or use of this substance as a phytosanitary o biocide compound)
Sweden:	150 ppm LLV; 350 mg/m3 LLV 250 ppm STV; 600 mg/m3 STV
United Kingdom:	500 ppm STEL; 1250 mg/m3 STEL 400 ppm TWA; 999 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* * *

Physical State:	Liquid	**Appearance:**	liquid
Color:	colorless	**Physical Form:**	liquid
Odor:	alcohol odor	**Odor Threshold:**	Not available
pH:	Not available	**Melting/Freezing Point:**	Not available
Boiling Point:	78 °C	**Decomposition:**	Not available
Flash Point:	<15.6 °C	**Evaporation Rate:**	Not available
OSHA Flammability Class:	IB	**LEL:**	Not available
UEL:	Not available	**Vapor Pressure:**	Not available
Vapor Density (air = 1):	Not available	**Density:**	0.7965 g/mL
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

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

Materials to Avoid

acids, amines, bases, combustible materials, halocarbons, halogens, metal carbide, metal oxides, metal salts, metals, oxidizing materials, peroxides

Decomposition Products

Thermal decomposition or combustion products: 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:

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

Oral LD50 Rat 7060 mg/kg; Inhalation LC50 Rat 124.7 mg/L 4 h

Mastic gum (61789-92-2)

Dermal LD50 Rabbit >5 g/kg

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

Inhalation LC50 Rat 83.2 mg/L 4 h; Inhalation LC50 Rat 64000 ppm 4 h; Oral LD50 Rat 5628 mg/kg; Dermal LD50 Rabbit 15800 mg/kg

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

Inhalation LC50 Rat 72.6 mg/L 4 h; Oral LD50 Rat 4396 mg/kg; Dermal LD50 Rat 12800 mg/kg; Dermal LD50 Rabbit 12870 mg/kg

RTECS Acute Toxicity (selected)

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

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

Inhalation: 124700 mg/m3/4 hour Inhalation Rat LC50; 5900 mg/m3/6 hour Inhalation Rat LC50; 20000 ppm/10 hour Inhalation Rat LC50

Oral: 15010 mg/kg Oral Rat LD50; 7 gm/kg Oral Rat LD50; 7060 mg/kg Oral Rat LD50

Mastic gum (61789-92-2)

Skin: >5 gm/kg Skin Rabbit LD50

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

Inhalation: 64000 ppm/8 hour Inhalation Rat LC50; 145000 ppm/1 hour Inhalation Rat LC50; 64000 ppm/4 hour Inhalation Rat LC50

Oral: 5600 mg/kg Oral Rat LD50

Skin: 15800 mg/kg Skin Rabbit LD50

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

Inhalation: 16000 ppm/8 hour Inhalation Rat LC50; 72600 mg/m3 Inhalation Rat LC50

Oral: 5000 mg/kg Oral Rat LD50; 5045 mg/kg Oral Rat LD50

Skin: 12800 mg/kg Skin Rabbit LD50

Acute Toxicity Level

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

Slightly Toxic: inhalation, ingestion

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

Slightly Toxic: dermal absorption, ingestion

Non Toxic: inhalation

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

Moderately Toxic: inhalation, ingestion

Slightly Toxic: dermal absorption

Irritation/Corrosivity

respiratory tract irritation, skin irritation, eye irritation

RTECS Irritation

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

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

500 mg/24 hour Eyes Rabbit mild; 100 uL Eyes Rabbit moderate; 100 mg/4 second(s) Eyes Rabbit moderate; 500 mg Eyes Rabbit severe; 400 mg/open Skin Rabbit mild; 20 mg/24 hour Skin Rabbit moderate

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

100 mg/24 hour Eyes Rabbit moderate; 40 mg Eyes Rabbit moderate; 20 mg/24 hour Skin Rabbit moderate

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

100 mg/24 hour Eyes Rabbit moderate; 10 mg Eyes Rabbit moderate; 100 mg Eyes Rabbit severe; 500 mg Skin Rabbit mild

Local Effects

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

Irritant: inhalation, skin, eye

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

Irritant: skin, eye

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

Irritant: inhalation, eye

Target Organs

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

central nervous system, liver

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

nervous system

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

central nervous system

Carcinogenicity

Component Carcinogenicity

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
OSHA:	Present
IARC:	Monograph 100E [in preparation] (in alcoholic beverages); Monograph 96 [2010] (in alcoholic beverages) (Group 1 (carcinogenic to humans))
Germany:	Category 5 (low carcinogenic potency)
Netherlands:	Present
Portugal:	A4 - Not Classifiable as a Human Carcinogen

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999]; Supplement 7 [1987]; Monograph 15 [1977] (Group 3 (not classifiable))
Portugal:	A4 - Not Classifiable as a Human Carcinogen

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

central nervous system disorders, eye disorders, kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies

* * * Section 12 - Ecological Information* * *

Component Analysis - Aquatic Toxicity

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)

Fish: 96 Hr LC50 Oncorhynchus mykiss: 12.0 - 16.0 mL/L [static]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static]; 96 Hr LC50 Pimephales promelas: 13400 - 15100 mg/L [flow-through]

Invertebrate: 48 Hr LC50 Daphnia magna: 9268 - 14221 mg/L; 24 Hr EC50 Daphnia magna: 10800 mg/L; 48 Hr EC50 Daphnia magna: 2 mg/L [Static]

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

Fish: 96 Hr LC50 Pimephales promelas: 28200 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 19500 - 20700 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 18 - 20 mL/L [static]; 96 Hr LC50 Lepomis macrochirus: 13500 - 17600 mg/L [flow-through]

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

Fish: 96 Hr LC50 Pimephales promelas: 9640 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 11130 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: >1400000 µg/L

Algae: 96 Hr EC50 Desmodesmus subspicatus: >1000 mg/L; 72 Hr EC50 Desmodesmus subspicatus: >1000 mg/L

Invertebrate: 48 Hr EC50 Daphnia magna: 13299 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. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Component Waste Numbers

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

RCRA: waste number U154 (Ignitable waste)

* * * Section 14 - Transport Information* * *

US DOT Information

Shipping Name: Alcohols, n.o.s. (Contains: Ethyl alcohol, Methyl alcohol)
UN/NA #: UN1987 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): 3

TDG Information

Shipping Name: Alcohols, n.o.s. (Contains: Ethyl alcohol, Methyl alcohol)
UN #: UN1987 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): 3

ADR Information

Shipping Name: Alcohols, n.o.s. (Contains: Ethyl alcohol, Methyl alcohol)
UN #: UN1987 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): 3

RID Information

Shipping Name: Alcohols, n.o.s. (Contains: Ethyl alcohol, Methyl alcohol)
UN #: UN1987 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): 3

IATA Information

Shipping Name: Alcohols, n.o.s. (Contains: Ethyl alcohol, Methyl alcohol)
UN #: UN1987 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): 3

ICAO Information

Shipping Name: Alcohols, n.o.s. (Contains: Ethyl alcohol, Methyl alcohol)
UN #: UN1987 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): 3

IMDG Information

Shipping Name: Alcohols, n.o.s. (Contains: Ethyl alcohol, Methyl alcohol)
UN #: UN1987 **Hazard Class:** 3 **Packing Group:** II
Required Label(s): 3

* * * 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.

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)

SARA 313: 1.0 % de minimis concentration
CERCLA: 5000 lb final RQ; 2270 kg final RQ

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)

SARA 313: 1.0 % de minimis concentration (only if manufactured by the strong acid process, no supplier notification)

SARA 311/312

Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **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
Ethyl alcohol (Part of Reagent Alcohol)	64-17-5	Yes	Yes	Yes	Yes	Yes
Methyl alcohol (Part of Reagent Alcohol)	67-56-1	Yes	Yes	Yes	Yes	Yes
Isopropyl alcohol (Part of Reagent Alcohol)	67-63-0	Yes	Yes	Yes	Yes	Yes

California Proposition 65

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer.
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

Canadian Regulations

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Canada WHMIS

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

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)
0.1 %

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)
1 %

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)
1 %

WHMIS Classification

B2, 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

Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)
ID Number 96, hazard class 1 - low hazard to waters (footnote 10)
Methyl alcohol (Part of Reagent Alcohol) (67-56-1)
ID Number 145, hazard class 1 - low hazard to waters
Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)
ID Number 135, hazard class 1 - low hazard to waters

EU Marking and Labelling

Symbols

F Highly flammable
Xn Harmful

Risk Phrases

R11 Highly flammable.
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
R43 May cause sensitization by skin contact.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases

S7 Keep container tightly closed.
S16 Keep away from sources of ignition - No smoking.
S24 Avoid contact with skin.
S25 Avoid contact with eyes.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Japanese Regulations

Japan Designated Chemical Substances (PRTR Law)

No components of this material 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" nor are they included in the "Pollutant Release and Transfer Register (PRTR)" of designated chemicals.

Japan Poisonous and Deleterious Substances

The following components are specified as poisonous and deleterious substances, and are regulated by Japan under the Poisonous and Deleterious Substances Control Law.
Methyl alcohol (Part of Reagent Alcohol) (67-56-1)
Deleterious, 100%

Industrial Safety and Health Law - Flammable Materials

The following components are 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.
Ethyl alcohol (Part of Reagent Alcohol) (64-17-5)
Flammable substance
Methyl alcohol (Part of Reagent Alcohol) (67-56-1)
Flammable substance
Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)
Flammable substance

Industrial Safety and Health Law - Label Disclosure

This list contains those harmful substances present in this product whose names are to be indicated on a container label as specified by Article 18 of the Enforcement Order of the Industrial Safety and Health Law.
Methyl alcohol (Part of Reagent Alcohol) (67-56-1)
>0.3 % weight

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)
>1 % weight

Industrial Safety and Health Law - Organic Solvents

The following components are 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.

Methyl alcohol (Part of Reagent Alcohol) (67-56-1)
Class 2

Isopropyl alcohol (Part of Reagent Alcohol) (67-63-0)
Class 2

* * * 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

R10 Flammable.
R11 Highly flammable.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R36 Irritating to eyes.
R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R43 May cause sensitization by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.
R67 Vapours may cause drowsiness and dizziness.

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.

New MSDS: 10/17/2011

End of Sheet VEN-149