a member of the Roche Group

Material Safety Data Sheet

Material Name: Steiner II Oxidizer **MSDS ID: VEN-147**

* * * 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 Oxidizer

Product Number(s)

150-4630, 06520979001, 860-030, 06521070001

Product Use

clinical

* * * Section 2 - Hazards Identification* * *

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

Preparation

Carc.Cat.3,,Xi,Xn; R:20/21/22-36/37/38-43-40

Risks

Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes, respiratory system and skin.
Limited evidence of a carcinogenic effect.
May cause sensitization by skin contact.

EMERGENCY OVERVIEW

Physical Form: liquid
Major Health Hazards: potentially fatal if inhaled, harmful on contact with the skin, harmful if swallowed, respiratory tract irritation, skin irritation, eye irritation, allergic reactions, cancer hazard (in humans)

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, nausea, headache, allergic reactions
Long Term: irritation, cancer

Skin

Short Term: irritation, allergic reactions, absorption may occur, nausea, headache, drowsiness, dizziness, loss of coordination
Long Term: irritation, allergic reactions

Eye

Short Term: irritation
Long Term: irritation

Ingestion

Short Term: irritation, allergic reactions, skin disorders, vomiting, stomach pain, headache, drowsiness, dizziness, loss of coordination, unconsciousness
Long Term: irritation, allergic reactions

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	---	---
57-55-6	Propylene glycol 200-338-0	7-13	---	---
50-00-0	Formaldehye 200-001-8	7-13	T	R:23/24/25-34-40-43
7646-85-7	Zinc chloride 231-592-0	<0.1	C N	R:22-34-50/53
64-19-7	Acetic acid 200-580-7	<0.01	C	R:10-35

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Zinc compounds.

* * * 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 skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing before reuse.

Eyes

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

Ingestion

If swallowed, get medical attention.

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

See Section 9 for Flammability Properties

Flammable Properties

Slight fire hazard.

Extinguishing Media

carbon dioxide, regular dry chemical, regular foam, water

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. Do not scatter spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

Hazardous Combustion Products

Thermal decomposition or combustion products: oxides of carbon

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Not sensitive

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

Water Release

Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

Occupational Spill/Release

Stop leak if possible without personal risk. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container. Keep unnecessary people away, isolate hazard area and deny entry.

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

Handling Procedures

Wash thoroughly after handling.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

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

Exposure Limits

Formaldehye (50-00-0)

ACGIH: 0.3 ppm Ceiling
Sensitizer

NIOSH: 0.016 ppm TWA
0.1 ppm Ceiling (15 min)
20 ppm IDLH

OSHA: 2 ppm STEL (Irritant and potential cancer hazard, See 29 CFR 1910.1048, 15 min); 0.5 ppm Action Level; 0.75 ppm TWA
3 ppm TWA (unless specified in 1910.1048)
10 ppm STEL (unless specified in 1910.1048, 30 min)
5 ppm Ceiling (unless specified in 1910.1048)
0.75 ppm TWA
2 ppm STEL (see 29 CFR 1910.1048)

Austria: 0.5 ppm STEL; 0.6 mg/m3 STEL
0.5 ppm TWA; 0.6 mg/m3 TWA
skin notation
0.5 ppm Ceiling; 0.6 mg/m3 Ceiling
Skin sensitizer

Denmark: 0.3 ppm Ceiling; 0.4 mg/m3 Ceiling

Finland: 1 ppm STEL; 1.2 mg/m3 STEL
0.3 ppm TWA; 0.37 mg/m3 TWA
1 ppm Ceiling; 1.2 mg/m3 Ceiling

France: 1 ppm STEL
0.5 ppm TWA

Germany (DFG): 0.3 ppm TWA MAK; 0.37 mg/m3 TWA MAK (no irritation should occur during mixed exposure)
0.6 ppm Peak (no irritation should occur during mixed exposure); 0.74 mg/m3 Peak (no irritation should occur during mixed exposure)
skin sensitizer

Greece: 2 ppm STEL; 2.5 mg/m3 STEL
2 ppm TWA; 2.5 mg/m3 TWA

Ireland: 2 ppm STEL; 2.5 mg/m3 STEL
2 ppm TWA; 2.5 mg/m3 TWA

Japan 0.2 ppm Ceiling; 0.24 mg/m3 Ceiling
0.1 ppm OEL; 0.12 mg/m3 OEL
Group 2 airway sensitizer; Group 1 skin sensitizer

Netherlands: 0.5 mg/m3 STEL
0.15 mg/m3 TWA

Portugal: 0.3 ppm Ceiling
Sensitizer

Spain: 0.3 ppm STEL [VLA-EC]; 0.37 mg/m3 STEL [VLA-EC]
sensitizer

Sweden: 0.5 ppm LLV; 0.6 mg/m3 LLV
1 ppm CLV; 1.2 mg/m3 CLV
Sensitizer

United Kingdom: 2 ppm STEL; 2.5 mg/m3 STEL
2 ppm TWA; 2.5 mg/m3 TWA

Propylene glycol (57-55-6)

Ireland: 150 ppm TWA (total vapour and particulates); 470 mg/m3 TWA (total vapour and particulates); 10 mg/m3 TWA (particulate)

United Kingdom: 450 ppm STEL (calculated, total particulate and vapour); 1422 mg/m3 STEL (calculated, total particulate and vapour); 30 mg/m3 STEL (calculated, particulate)
150 ppm TWA (total particulate and vapour); 474 mg/m3 TWA (total particulate and vapour); 10 mg/m3 TWA (particulate)

Zinc chloride (7646-85-7)

ACGIH: 1 mg/m3 TWA (fume)
2 mg/m3 STEL (fume)

NIOSH:	1 mg/m3 TWA (fume) 2 mg/m3 STEL (fume) 50 mg/m3 IDLH (fume)
OSHA:	1 mg/m3 TWA (fume) 2 mg/m3 STEL (fume)
Belgium:	1 mg/m3 TWA (fume) 2 mg/m3 STEL (fume) 1 mg/m3 TWA (fume)
Denmark:	0.5 mg/m3 TWA (as Zn, including vapour)
Finland:	1 mg/m3 TWA (fume)
France:	1 mg/m3 TWA (fume)
Germany (DFG):	2 mg/m3 Peak (inhalable fraction)
Greece:	2 mg/m3 STEL (fume) 1 mg/m3 TWA (fume)
Ireland:	2 mg/m3 STEL (fume) 1 mg/m3 TWA (fume)
Portugal:	1 mg/m3 TWA [VLE-MP] (fume) 2 mg/m3 STEL [VLE-CD (fume)
Spain:	2 mg/m3 STEL [VLA-EC] (fume) 1 mg/m3 TWA [VLA-ED] (fume)
Sweden:	1 mg/m3 LLV (respirable dust)
United Kingdom:	2 mg/m3 STEL (fume) 1 mg/m3 TWA (fume)

Acetic acid (64-19-7)

ACGIH:	10 ppm TWA 15 ppm STEL
NIOSH:	10 ppm TWA; 25 mg/m3 TWA 15 ppm STEL; 37 mg/m3 STEL 50 ppm IDLH
OSHA:	10 ppm TWA; 25 mg/m3 TWA 10 ppm TWA; 25 mg/m3 TWA
EEC:	10 ppm TWA; 25 mg/m3 TWA
Austria:	20 ppm STEL (8 X 5 min); 50 mg/m3 STEL (8 X 5 min) 10 ppm TWA; 25 mg/m3 TWA
Belgium:	15 ppm STEL; 38 mg/m3 STEL 10 ppm TWA; 25 mg/m3 TWA
Denmark:	10 ppm TWA; 25 mg/m3 TWA
Finland:	10 ppm STEL; 25 mg/m3 STEL 5 ppm TWA; 13 mg/m3 TWA
France:	10 ppm STEL; 25 mg/m3 STEL
Germany:	10 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); 25 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):	10 ppm TWA MAK; 25 mg/m3 TWA MAK 20 ppm Peak; 50 mg/m3 Peak
Greece:	15 ppm STEL; 37 mg/m3 STEL 10 ppm TWA; 25 mg/m3 TWA
Ireland:	15 ppm STEL; 37 mg/m3 STEL 10 ppm TWA; 25 mg/m3 TWA
Japan	10 ppm OEL; 25 mg/m3 OEL
Portugal:	10 ppm TWA [VLE-MP] 15 ppm STEL [VLE-CD
Spain:	15 ppm STEL [VLA-EC]; 37 mg/m3 STEL [VLA-EC] 10 ppm TWA [VLA-ED]; 25 mg/m3 TWA [VLA-ED]
Sweden:	5 ppm LLV; 13 mg/m3 LLV 10 ppm STV; 25 mg/m3 STV

Ventilation

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Wear splash resistant safety goggles with a faceshield. 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
Physical Form:	liquid	**Odor:**	Not available
Odor Threshold:	Not available	**pH:**	5.23
Melting/Freezing Point:	Not available	**Boiling Point:**	100 °C
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:**	1.0131 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. May ignite or explode on contact with combustible materials.

Materials to Avoid

acids, bases, combustible materials, halocarbons, halogens, metal salts, metals, oxidizing materials, peroxides, reducing agents

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:

Formaldehye (50-00-0)

Oral LD50 Rat 500 mg/kg; Inhalation LC50 Rat 0.578 mg/L 4 h

Propylene glycol (57-55-6)

Oral LD50 Rat 20000 mg/kg; Dermal LD50 Rabbit 20800 mg/kg

Zinc chloride (7646-85-7)

Oral LD50 Rat 350 mg/kg

Acetic acid (64-19-7)
Inhalation LC50 Rat 11.4 mg/L 4 h; Oral LD50 Rat 3310 mg/kg; Dermal LD50 Rabbit 1060 mg/kg

RTECS Acute Toxicity (selected)
The components of this material have been reviewed, and RTECS publishes the following endpoints:
Formaldehye (50-00-0)
Inhalation: 203 mg/m3 Inhalation Rat LC50; 815 ppm/0.5 hour Inhalation Rat LC50; 250 ppm/2 hour Inhalation Rat LC50; 250 ppm/4 hour Inhalation Rat LC50; 578 mg/m3/2 hour Inhalation Rat LC50
Oral: 100 mg/kg Oral Rat LD50; 500 mg/kg Oral Rat LD50
Skin: 270 uL/kg Skin Rabbit LD50; 270 mg/kg Skin Rabbit LD50
Propylene glycol (57-55-6)
Oral: 20 gm/kg Oral Rat LD50
Skin: 20800 mg/kg Skin Rabbit LD50; 20800 mg/kg Skin Rabbit LD50

Acute Toxicity Level
Formaldehye (50-00-0)
Highly Toxic: inhalation
Toxic: dermal absorption, ingestion
Propylene glycol (57-55-6)
Non Toxic: dermal absorption, ingestion
Zinc chloride (7646-85-7)
Toxic: ingestion
Acetic acid (64-19-7)
Toxic: inhalation
Moderately Toxic: dermal absorption, ingestion

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:
Formaldehye (50-00-0)
4 ppm/5 minute(s) Eyes Human; 1 ppm/6 minute(s) Eyes Human mild; 2 percent Skin Human; 150 ug/3 day(s) intermittent Skin Human mild; 0.01 percent Skin Human severe; 750 ug/24 hour Eyes Rabbit severe; 750 ug Eyes Rabbit severe; 10 mg Eyes Rabbit severe; 37 percent Eyes Rabbit severe; 540 mg/open Skin Rabbit mild; 50 mg/24 hour Skin Rabbit moderate; 2 mg/24 hour Skin Rabbit severe
Propylene glycol (57-55-6)
30 percent Skin Child moderate; 500 mg/7 day(s) Skin Human mild; 104 mg/3 day(s) intermittent Skin Human moderate; 10 percent Skin Man; 500 mg/24 hour Eyes Rabbit mild; 100 mg Eyes Rabbit mild; 30 percent/open Skin Woman mild

Local Effects
Formaldehye (50-00-0)
Irritant: skin, eye
Corrosive: inhalation, skin, eye, ingestion
Zinc chloride (7646-85-7)
Corrosive: inhalation, skin, eye, ingestion
Acetic acid (64-19-7)
Corrosive: inhalation, skin, eye, ingestion

Target Organs
Formaldehye (50-00-0)
immune system (sensitizer)
Zinc chloride (7646-85-7)
immune system (sensitizer)

Carcinogenicity
Component Carcinogenicity
Formaldehye (50-00-0)

ACGIH:	A2 - Suspected Human Carcinogen
OSHA:	Present
NIOSH:	potential occupational carcinogen
NTP:	Known Human Carcinogen
IARC:	Monograph 100F [in preparation]; Monograph 88 [2006]; Monograph 62 [1995]; Supplement 7 [1987] (Group 1 (carcinogenic to humans))
Austria:	Group B Carcinogen
Denmark:	Present
France:	Carcinogen category 3
Germany:	Category 4 (no significant contribution to human cancer)
Italy:	Category 3 Carcinogen
Portugal:	A2 - Suspected Human Carcinogen
	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
kidney disorders, respiratory disorders, skin disorders and allergies

* * * Section 12 - Ecological Information* * *

Component Analysis - Aquatic Toxicity
Formaldehye (50-00-0)

Fish:	96 Hr LC50 Pimephales promelas: 22.6 - 25.7 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 1510 µg/L [static]; 96 Hr LC50 Brachydanio rerio: 41 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 0.032 - 0.226 mL/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 100 - 136 mg/L [static]; 96 Hr LC50 Pimephales promelas: 23.2 - 29.7 mg/L [static]
Invertebrate:	48 Hr LC50 Daphnia magna: 2 mg/L; 48 Hr EC50 Daphnia magna: 11.3 - 18 mg/L [Static]

Propylene glycol (57-55-6)

Fish:	96 Hr LC50 Oncorhynchus mykiss: 51600 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 41 - 47 mL/L [static]; 96 Hr LC50 Pimephales promelas: 51400 mg/L [static]; 96 Hr LC50 Pimephales promelas: 710 mg/L
Algae:	96 Hr EC50 Pseudokirchneriella subcapitata: 19000 mg/L
Invertebrate:	24 Hr EC50 Daphnia magna: >10000 mg/L; 48 Hr EC50 Daphnia magna: >1000 mg/L [Static]

Acetic acid (64-19-7)

Fish:	96 Hr LC50 Pimephales promelas: 79 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 75 mg/L [static]
Invertebrate:	24 Hr EC50 Daphnia magna: 47 mg/L; 48 Hr EC50 Daphnia magna: 65 mg/L [Static]

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

Formaldehye (50-00-0)

RCRA: waste number U122

* * * 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.

Formaldehye (50-00-0)

SARA 302/304: 500 lb TPQ
100 lb EPCRA RQ
SARA 313: 0.1 % de minimis concentration
CERCLA: 100 lb final RQ; 45.4 kg final RQ
OSHA (safety): 1000 lb TQ

Zinc chloride (7646-85-7)

SARA 313: 1.0 % de minimis concentration (Chemical Category N982, related to Zinc compounds)
CERCLA: 1000 lb final RQ; 454 kg final RQ

Acetic acid (64-19-7)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

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
Formaldehye	50-00-0	Yes	Yes	Yes	Yes	Yes
Propylene glycol	57-55-6	No	No	Yes	Yes	Yes
Zinc chloride	7646-85-7	Yes	Yes	Yes	Yes	Yes
Acetic acid	64-19-7	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.

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:

Formaldehye (50-00-0)
0.1 %

Propylene glycol (57-55-6)
1 %

Zinc chloride (7646-85-7)
1 %

Acetic acid (64-19-7)
1 %

WHMIS Classification

D1A, 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

Formaldehye (50-00-0)
ID Number 112, hazard class 2 - hazard to waters

Propylene glycol (57-55-6)
ID Number 280, hazard class 1 - low hazard to waters

Zinc chloride (7646-85-7)
ID Number 207, hazard class 3 - severe hazard to waters

Acetic acid (64-19-7)
ID Number 93, hazard class 1 - low hazard to waters (>25%)

EU Marking and Labelling

Symbols

Xn Harmful
Xi Irritant

Risk Phrases

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38 Irritating to eyes, respiratory system and skin.
R43 May cause sensitization by skin contact.
R40 Limited evidence of a carcinogenic effect.

Safety Phrases

S24 Avoid contact with skin.
S36/37 Wear suitable protective clothing and gloves.

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.

Formaldehye (50-00-0)
411 >=0.1 % (Designated class 1 substance)

Zinc chloride (7646-85-7)
1 >=1 % [as Zn, 0.48]

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.

Formaldehye (50-00-0)
Deleterious, >1%; Deleterious, 100%

Zinc chloride (7646-85-7)
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.

Formaldehye (50-00-0)
Flammable substance
Acetic acid (64-19-7)
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.

Formaldehye (50-00-0)
>0.1 % weight

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

R10 Flammable.
R22 Harmful if swallowed.
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R34 Causes burns.
R35 Causes severe burns.
R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitization by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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-147