a member of the Roche Group

Material Safety Data Sheet

Material Name: Discovery Amplification H2O2 **MSDS ID: VEN-058**

* * * 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: Discovery Amplification H2O2

Product Number(s)

760-052, 760-4520, 06472320001

Product Use

Research use only

* * * Section 2 - Hazards Identification * * *

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

Preparation

This material is not classified.

EMERGENCY OVERVIEW

Color: colorless to yellow
Physical Form: liquid
Odor: odorless
Major Health Hazards: No significant target effects reported.

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: no information on significant adverse effects
Long Term: no information on significant adverse effects

Skin

Short Term: no information on significant adverse effects
Long Term: no information on significant adverse effects

Eye

Short Term: no information on significant adverse effects
Long Term: no information on significant adverse effects

Ingestion

Short Term: no information on significant adverse effects
Long Term: no information on significant adverse effects

OSHA Regulatory Status

This material is not 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	---	---
1303-96-4	SODIUM BORATE DECAHYDRATE 215-540-4	0.1-3	T Xn Xi	R:60-61-22-36-37-38
10043-35-3	BORIC ACID 233-139-2	0.1-3	T Xi	R:60-61-37-38

7647-14-5	SODIUM CHLORIDE 231-598-3	0.1-3	---	---
12209-98-2	SODIUM STANNATE TRIHYDRATE	0.001-1	---	---

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Borax (B4Na2O7.10H2O) (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. 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.

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

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

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

BORIC ACID (10043-35-3)

ACGIH: 2 mg/m3 TWA (inhalable fraction)
6 mg/m3 STEL (inhalable fraction)
Belgium: 6 mg/m3 STEL (as borate)
2 mg/m3 TWA (as borate)
Germany: 0.5 mg/m3 TWA (exposure factor 2)
Portugal: 2 mg/m3 TWA (inhalable fraction)
6 mg/m3 STEL (inhalable fraction)

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

Respiratory Protection

No respirator is required under normal conditions of use.

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

Physical State:	Liquid	**Appearance:**	Colorless to yellow liquid
Color:	colorless to yellow	**Physical Form:**	liquid
Odor:	odorless	**Odor Threshold:**	Not available
pH:	Not available	**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

None reported.

Materials to Avoid

acids, metals

Decomposition Products

miscellaneous decomposition products

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:

SODIUM BORATE DECAHYDRATE (1303-96-4)

Oral LD50 Rat 2660 mg/kg

BORIC ACID (10043-35-3)

Oral LD50 Rat 2660 mg/kg; Inhalation LC50 Rat >0.16 mg/L 4 h; Dermal LD50 Rabbit >2000 mg/kg

RTECS Acute Toxicity (selected)

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

SODIUM BORATE DECAHYDRATE (1303-96-4)

Oral: 2660 mg/kg Oral Rat LD50

BORIC ACID (10043-35-3)

Oral: 2660 mg/kg Oral Rat LD50; 2500 mg/kg Oral Rat LD50

Acute Toxicity Level

SODIUM BORATE DECAHYDRATE (1303-96-4)

Moderately Toxic: ingestion.

BORIC ACID (10043-35-3)

Moderately Toxic: ingestion.

Irritation/Corrosivity

RTECS Irritation

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

BORIC ACID (10043-35-3)

15 mg/3 day(s) intermittent Skin Human mild

Local Effects

SODIUM BORATE DECAHYDRATE (1303-96-4)

Irritant: inhalation, skin, eye.

BORIC ACID (10043-35-3)

Irritant: inhalation, skin.

Target Organs

SODIUM BORATE DECAHYDRATE (1303-96-4)

central nervous system, kidneys.

BORIC ACID (10043-35-3)

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
BORIC ACID (10043-35-3)
ACGIH: A4 - Not Classifiable as a Human Carcinogen
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
None known.

* * * Section 12 - Ecological Information * * *

Component Analysis - Aquatic Toxicity
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
BORIC ACID (10043-35-3)
Fish: 72 Hr LC50 Carassius auratus: 1020 mg/L [flow-through]
Invertebrate: 48 Hr EC50 Daphnia magna: 115 - 153 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.

* * * 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: No **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
SODIUM BORATE DECAHYDRATE	1303-96-4	Yes	Yes	Yes	Yes	Yes	Yes

California Proposition 65

Not regulated under California Proposition 65

Canadian Regulations

WHMIS Classification

Not a Controlled Product under Canada's Workplace Hazardous Material Information System.

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

SODIUM BORATE DECAHYDRATE (1303-96-4)

Number 37, hazard class 1 - low hazard to waters

BORIC ACID (10043-35-3)

Number 315, hazard class 1 - low hazard to waters

Component Analysis

SODIUM BORATE DECAHYDRATE (1303-96-4)

Reason_for_inclusion: Toxic for reproduction, Article 57c

BORIC ACID (10043-35-3)

Reason_for_inclusion: Toxic for reproduction, Article 57c

EU Marking and Labelling

This material is not classified.

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

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.
R36 Irritating to eyes.
R37 Irritating to respiratory system.
R38 Irritating to skin.
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.

MSDS Update: 9/3/2010

End of Sheet VEN-058