



a member of the Roche Group

Material Safety Data Sheet

Material Name: MORPHO SAVE™ (10X)

MSDS ID: 00232027

*** 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: MORPHO SAVE™ (10X)

Product Number(s)

250-010, 05260990001

Product Use

Research use only

*** Section 2 - Hazards Identification***

NFPA Ratings: Health: 2 Fire: 1 Reactivity: 0

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

Preparation

This material is not classified.

EMERGENCY OVERVIEW

Physical Form: liquid

Odor: vinegar odor

Major Health Hazards: harmful if inhaled, respiratory tract irritation, skin irritation, eye irritation, allergic reactions

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, cough, wheezing, allergic reactions, difficulty breathing, loss of voice, lung congestion, changes in blood pressure

Long Term: irritation, allergic reactions, digestive disorders

Skin

Short Term: irritation, allergic reactions, skin disorders

Long Term: irritation, allergic reactions, skin disorders

Eye

Short Term: irritation, tearing, eye damage, blindness

Long Term: irritation, tearing, eye damage, blindness

Ingestion

Short Term: irritation, allergic reactions, vomiting, nausea, diarrhea, stomach pain, changes in body temperature, irregular heartbeat, difficulty breathing, loss of voice, lung congestion, blood disorders, convulsions, changes in blood pressure, bluish skin color, skin disorders, unconsciousness

Long Term: irritation, allergic reactions, vomiting, diarrhea, stomach pain, changes in body temperature, irregular heartbeat, difficulty breathing, loss of voice, lung congestion, blood disorders, convulsions

OSHA Regulatory Status

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

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

CAS #	Component / EU Number	Percent	Symbol(s)	Risk Phrase(s)
Not Available	NON-HAZARDOUS -	60-100	---	---
7681-57-4	SODIUM METABISULFITE 231-673-0	1-5	Xn	R:22-31-41
64-19-7	ACETIC ACID 200-580-7	1-5	C	R:10-35

*** 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

Slight fire hazard.

Extinguishing Media

carbon dioxide, regular dry chemical, regular foam, water

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 carbon, oxides of sulfur, oxides of sodium

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.

*** 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 15 C and 30 C. Avoid direct sunlight. See original container for storage recommendations. Keep separated from incompatible substances.

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

Exposure Limits

SODIUM METABISULFITE (7681-57-4)

ACGIH:	5 mg/m3 TWA
NIOSH:	5 mg/m3 TWA
OSHA:	5 mg/m3 TWA
Belgium:	5 mg/m3 TWA
Denmark:	5 mg/m3 TWA
France:	5 mg/m3 VME
Greece:	5 mg/m3 TWA
Ireland:	5 mg/m3 TWA
Portugal:	5 mg/m3 TWA
Spain:	5 mg/m3 VLA-ED
United Kingdom:	15 mg/m3 STEL (calculated) 5 mg/m3 TWA

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 MAK; 25 mg/m3 MAK
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 VLCT; 25 mg/m3 VLCT
Germany:	10 ppm TWA (exposure factor 2); 25 mg/m3 TWA (exposure factor 2)
Germany (DFG):	10 ppm MAK; 25 mg/m3 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 15 ppm STEL
Spain:	15 ppm VLA-EC; 37 mg/m3 VLA-EC 10 ppm VLA-ED; 25 mg/m3 VLA-ED
Sweden:	5 ppm LLV; 13 mg/m3 LLV 10 ppm STV; 25 mg/m3 STV

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

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Respiratory Protection

No respirator is required under normal conditions of use.

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

Physical State:	Liquid	Appearance:	Clear liquid
Physical Form:	liquid	Odor:	vinegar odor
Odor Threshold:	Not available	pH:	4.6
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
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. Avoid contact with incompatible materials.

Materials to Avoid

oxidizing materials, strong acids, strong alkali

Decomposition Products

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

SODIUM METABISULFITE (7681-57-4)

Oral LD50 Rat 1131 mg/kg; Dermal LD50 Rat >2 g/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

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RTECS Acute Toxicity (selected)

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

SODIUM METABISULFITE (7681-57-4)

Oral: 1131 mg/kg Oral Rat LD50

Skin: >1 gm/kg Skin Guinea pig LD50

ACETIC ACID (64-19-7)

Inhalation: 11000 mg/m³/4 hour Inhalation Rat LC50

Oral: 3310 mg/kg Oral Rat LD50

Skin: 1060 mg/kg Skin Rabbit LD50; 1060 µL/kg Skin Rabbit LD50

Acute Toxicity Level

SODIUM METABISULFITE (7681-57-4)

Moderately Toxic: ingestion

ACETIC ACID (64-19-7)

Toxic: inhalation

Moderately Toxic: dermal absorption, ingestion

Irritation/Corrosivity

RTECS Irritation

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

SODIUM METABISULFITE (7681-57-4)

100 mg/24 hour Eyes Rabbit mild; 500 mg Skin Rabbit

ACETIC ACID (64-19-7)

50 mg/24 hour Skin Human mild; 5 mg/30 second(s) Eyes Rabbit mild; 50 mg/24 hour Skin Rabbit mild; 525 mg/open Skin Rabbit severe

Local Effects

SODIUM METABISULFITE (7681-57-4)

Irritant: inhalation, skin, eye

ACETIC ACID (64-19-7)

Corrosive: inhalation, skin, eye, ingestion

Target Organs

SODIUM METABISULFITE (7681-57-4)

immune system (sensitizer)

Carcinogenicity

Component Carcinogenicity

SODIUM METABISULFITE (7681-57-4)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 54 [1992] (Group 3 (not classifiable))

Portugal: A4 - Not Classifiable as a Human Carcinogen

ACETIC ACID (64-19-7)

Denmark: Present

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

eye disorders, respiratory disorders, skin disorders and allergies

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*** Section 12 - Ecological Information***

Component Analysis - Aquatic Toxicity

SODIUM METABISULFITE (7681-57-4)

Fish: 96 Hr LC50 Lepomis macrochirus: 32 mg/L [static]

Algae: 72 Hr EC50 Desmodesmus subspicatus: 48 mg/L; 96 Hr EC50 Desmodesmus subspicatus: 40 mg/L

Invertebrate: 24 Hr EC50 Daphnia magna Straus: 89 mg/L

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 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.

*** 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.

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

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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 METABISULFITE	7681-57-4	Yes	Yes	Yes	Yes	Yes	Yes
ACETIC ACID	64-19-7	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:

SODIUM METABISULFITE (7681-57-4)

1 %

ACETIC ACID (64-19-7)

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

SODIUM METABISULFITE (7681-57-4)

ID Number 1169, hazard class 1 - low hazard to waters

ACETIC ACID (64-19-7)

ID Number 93, hazard class 1 - low hazard to waters (>25%)

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

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.

ACETIC ACID (64-19-7)

Flammable substance

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.

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*** 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.
R31 Contact with acids liberates toxic gas.
R35 Causes severe burns.
R41 Risk of serious damage to eyes.

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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End of Sheet 00232027