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# Material Safety Data Sheet

Material Name: Heavy Metal Extraction System

MSDS ID: VEN-105

## \*\*\* 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: Heavy Metal Extraction System

### Product Number(s)

860-104, 05279453001

### Product Use

clinical/research

## \*\*\* Section 2 - Hazards Identification\*\*\*

### NFPA Ratings: Health: 1 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: solid

Major Health Hazards: No significant target effects reported.

### POTENTIAL HEALTH EFFECTS

#### Inhalation

Short Term: irritation

Long Term: irritation, difficulty breathing, lung congestion, lung damage

#### Skin

Short Term: irritation

Long Term: irritation

#### Eye

Short Term: irritation

Long Term: irritation

#### Ingestion

Short Term: gastrointestinal irritation, nausea, vomiting, stomach pain

Long Term: no information on significant adverse effects

### 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	Plastic bag	>1	---	---
Not Available	Polypropylene mesh	>1	---	---
7732-18-5	Water 231-791-2	>1	---	---
7440-44-0	Carbon 231-153-3	>1	F	R:11
60177-39-1	Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, polymer with diethenylbenzene	>1	---	---

# Material Safety Data Sheet

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MSDS ID: VEN-105

## Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Particulates not otherwise classified (PNOC), Graphite, synthetic, Inert or Nuisance Dust.

### \*\*\* 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

Slight fire hazard. Dust/air mixtures may ignite or explode.

#### Extinguishing Media

regular dry chemical, carbon dioxide, regular foam, water

#### Unsuitable Extinguishing Media

high-pressure water streams

#### 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.

#### Hazardous Combustion Products

**Thermal decomposition or combustion products:** amines, hydrogen chloride, oxides of carbon

#### Sensitivity to Mechanical Impact

Not sensitive

#### Sensitivity to Static Discharge

Yes

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

#### Occupational Spill/Release

Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry.

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

#### Handling Procedures

After use, the units will contain toxic heavy metals. Care should be taken to handle the unit only by the provided handle. Wash thoroughly after handling.

#### Storage Procedures

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

# Material Safety Data Sheet

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

### Exposure Limits

#### Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, polymer with diethenylbenzene (60177-39-1)

- ACGIH:** 10 mg/m3 TWA (inhalable particles, recommended); 3 mg/m3 TWA (respirable particles, recommended, related to Particulates not otherwise classified (PNOC))
- OSHA:** 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction, related to Particulates not otherwise classified (PNOC))  
15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction, related to Particulates not otherwise classified (PNOC))
- Belgium:** 3 mg/m3 TWA (alveolar fraction); 10 mg/m3 TWA (inhalable fraction, related to Particulates not otherwise classified (PNOC))
- Ireland:** 10 mg/m3 TWA (total inhalable); 4 mg/m3 TWA (respirable, related to Particulates not otherwise classified (PNOC))
- Portugal:** 10 mg/m3 TWA (inhalable fraction, particulate matter containing no Asbestos and < 1% Crystalline silica); 3 mg/m3 TWA (respirable fraction, particulate matter containing no Asbestos and < 1% Crystalline silica, related to Particulates not otherwise classified (PNOC))
- Spain:** 10 mg/m3 VLA-ED (recommended limit, this value is for the particulated matter that is free from Asbestos and contains less than 1% of Crystalline silica, inhalable fraction); 3 mg/m3 VLA-ED (recommended limit, this value is for the particulated matter that is free from Asbestos and contains less than 1% of Crystalline silica, respirable fraction, related to Particulates not otherwise classified (PNOC))

#### Carbon (7440-44-0)

- OSHA:** 15 mppcf TWA (respirable fraction); 5 mg/m3 TWA (respirable fraction); 50 mppcf TWA (total dust); 15 mg/m3 TWA (total dust, related to Inert or Nuisance Dust)
- Austria:** 10 mg/m3 STEL (alveolar dust with <1% quartz, respirable fraction, 2 X 60 min)  
5 mg/m3 MAK (alveolar dust with <1% quartz, respirable fraction)
- France:** 10 mg/m3 VME (restrictive limit); 5 mg/m3 VME (restrictive limit, alveolar fraction, related to Inert or Nuisance Dust)
- Sweden:** 3 mg/m3 LLV (total dust)

### 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>	Solid	<b>Appearance:</b>	Not available
<b>Physical Form:</b>	solid	<b>Odor:</b>	Not available
<b>Odor Threshold:</b>	Not available	<b>pH:</b>	Not available
<b>Melting/Freezing Point:</b>	Not available	<b>Boiling Point:</b>	Not available
<b>Flash Point:</b>	not flammable	<b>Decomposition:</b>	Not available
<b>Evaporation Rate:</b>	Not available	<b>LEL:</b>	Not available
<b>UEL:</b>	Not available	<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density (air = 1):</b>	Not applicable	<b>Density:</b>	Not available
<b>Water Solubility:</b>	Not available	<b>Log KOW:</b>	Not available
<b>Coeff. Water/Oil Dist.:</b>	Not available	<b>Auto Ignition:</b>	Not available

# Material Safety Data Sheet

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MSDS ID: VEN-105

## \*\*\* 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

acids, combustible materials, halogens, metals, oxidizing materials, peroxides, reducing agents

### Decomposition Products

**Thermal decomposition or combustion products:** amines, hydrogen chloride, 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:

#### **Carbon (7440-44-0)**

Oral LD50 Rat >10000 mg/kg

#### **Water (7732-18-5)**

Oral LD50 Rat >90 mL/kg

#### RTECS Acute Toxicity (selected)

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

#### **Water (7732-18-5)**

Oral: >90 mL/kg Oral Rat LD50

### Irritation/Corrosivity

#### RTECS Irritation

The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

### Carcinogenicity

#### Component Carcinogenicity

None of the substances in this preparation are listed by ACGIH, OSHA, NIOSH, NTP, IARC, Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, or United Kingdom.

### 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

respiratory disorders

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

### Component Analysis - Aquatic Toxicity

No ecotoxicity data are available for this product's components.

### Mobility

No data available for the mixture.

# Material Safety Data Sheet

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MSDS ID: VEN-105

## Persistence & Degradation

No data available for the mixture.

## Bioaccumulative Potential

No data available for the mixture.

### \*\*\* Section 13 - Disposal Considerations\*\*\*

## Disposal Methods

Used units may not be suitable for municipal solid waste disposal. Consult local authorities for recommended method of disposal.

## 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
Benzenemethanaminium, ar-ethenyl-N,N,N-trimethyl-, chloride, polymer with diethenylbenzene (¹related to: Particulates not otherwise classified (PNOC))	60177-39-1	No	No	No	No	No	Yes¹
Carbon (¹related to: Graphite, synthetic)	7440-44-0	No	No	No	No	Yes¹	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

### Carbon (7440-44-0)

ID Number 801, not considered hazardous to water

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MSDS ID: VEN-105

## 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

R11 Highly flammable.

### 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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New MSDS: 2/11/2011

End of Sheet VEN-105