



a member of the Roche Group

# Material Safety Data Sheet

Material Name: Cleaning Solution D

MSDS ID: VEN-184

**\*\*\* 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: Cleaning Solution D

**Product Number(s)**  
06649246001

**Product Use**  
clinical/research

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

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

**Preparation**  
R:36/38

**Risks**  
Irritating to eyes and skin.

**EMERGENCY OVERVIEW**

**Color:** colorless  
**Physical Form:** liquid  
**Odor:** odorless  
**Major Health Hazards:** respiratory tract burns, skin burns, eye burns, mucous membrane burns

### POTENTIAL HEALTH EFFECTS

**Inhalation**

**Short Term:** burns  
**Long Term:** burns

**Skin**

**Short Term:** burns  
**Long Term:** burns

**Eye**

**Short Term:** burns  
**Long Term:** burns

**Ingestion**

**Short Term:** burns  
**Long Term:** burns

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## 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	60-100	---	---
1310-58-3	Potassium hydroxide 215-181-3	<1	C	R:22-35

### \*\*\* 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 skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes. Get immediate medical attention.

#### Eyes

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

#### Ingestion

If swallowed, do not induce vomiting. Get immediate medical attention.

#### Note to Physicians

For inhalation, consider oxygen.  
Avoid gastric lavage or emesis.

### \*\*\* Section 5 - Fire-Fighting Measures\*\*\*

See Section 9 for Flammability Properties

#### Flammable Properties

Negligible fire hazard.

#### Extinguishing Media

regular dry chemical, carbon dioxide, water spray

#### Unsuitable Extinguishing Media

Do not use 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. 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

Do not touch spilled material. Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.

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## \*\*\* 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

#### Potassium hydroxide (1310-58-3)

<b>ACGIH:</b>	2 mg/m3 Ceiling
<b>NIOSH:</b>	2 mg/m3 Ceiling
<b>OSHA:</b>	2 mg/m3 Ceiling
<b>Austria:</b>	2 mg/m3 TWA (inhalable fraction)
<b>Denmark:</b>	2 mg/m3 Ceiling
<b>Finland:</b>	2 mg/m3 STEL 2 mg/m3 Ceiling
<b>France:</b>	2 mg/m3 STEL
<b>Greece:</b>	2 mg/m3 STEL 2 mg/m3 TWA
<b>Ireland:</b>	2 mg/m3 STEL
<b>Japan</b>	2 mg/m3 Ceiling
<b>Portugal:</b>	2 mg/m3 Ceiling [VLE-CM]
<b>Spain:</b>	2 mg/m3 STEL [VLA-EC]
<b>Sweden:</b>	1 mg/m3 LLV (inhalable dust) 2 mg/m3 CLV (inhalable dust)
<b>United Kingdom:</b>	2 mg/m3 STEL

### Ventilation

Provide local exhaust or process enclosure ventilation system. 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.

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

<b>Physical State:</b> Liquid	<b>Appearance:</b> Clear, colorless liquid
<b>Color:</b> colorless	<b>Physical Form:</b> liquid
<b>Odor:</b> odorless	<b>Odor Threshold:</b> Not available
<b>pH:</b> 12.9	<b>Melting/Freezing Point:</b> Not available
<b>Boiling Point:</b> 100 °C	<b>Decomposition:</b> Not available
<b>Flash Point:</b> not flammable	<b>Evaporation Rate:</b> Not available
<b>LEL:</b> Not available	<b>UEL:</b> Not available
<b>Vapor Pressure:</b> Not available	<b>Vapor Density (air = 1):</b> Not available
<b>Density:</b> 0.964 g/cm3	<b>Specific Gravity (water = 1):</b> Not available
<b>Water Solubility:</b> miscible	<b>Log KOW:</b> Not available
<b>Coeff. Water/Oil Dist.:</b> Not available	<b>Auto Ignition:</b> Not available
<b>Viscosity:</b> Not available	<b>Volatility:</b> 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.

### Materials to Avoid

acids, combustible materials, metals, halo carbons, metal salts, oxidizing materials, reducing agents

### Decomposition Products

Thermal decomposition or combustion products: oxides of potassium

### 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:

#### Potassium hydroxide (1310-58-3)

Oral LD50 Rat 214 mg/kg

#### RTECS Acute Toxicity (selected)

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

#### Potassium hydroxide (1310-58-3)

Oral: 273 mg/kg Oral Rat LD50

#### Acute Toxicity Level

#### Potassium hydroxide (1310-58-3)

Toxic: ingestion

#### Irritation/Corrosivity

respiratory tract burns, skin burns, eye burns, mucous membrane burns

#### RTECS Irritation

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

#### Potassium hydroxide (1310-58-3)

50 mg/24 hour Skin Guinea pig severe; 50 mg/24 hour Skin Human severe; 1 mg/24 hour Eyes Rabbit moderate; 50 mg/24 hour Skin Rabbit severe

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## Local Effects

### Potassium hydroxide (1310-58-3)

**Corrosive:** inhalation, skin, eye, ingestion

## 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

No data available for the mixture.

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

### Component Analysis - Aquatic Toxicity

#### Potassium hydroxide (1310-58-3)

**Fish:** 96 Hr LC50 Gambusia affinis: 80 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. Subject to disposal regulations: U.S. EPA 40 CFR 262.

Hazardous Waste Number(s): D002.

### Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

## \*\*\* Section 14 - Transport Information\*\*\*

### US DOT Information

**Shipping Name:** Potassium hydroxide, solution

**UN/NA #:** UN1814 **Hazard Class:** 8 **Packing Group:** III

**Required Label(s):** 8

### TDG Information

**Shipping Name:** Potassium hydroxide, solution

**UN #:** UN1814 **Hazard Class:** 8 **Packing Group:** III

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Required Label(s): 8

## 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.

#### Potassium hydroxide (1310-58-3)

CERCLA: 1000 lb final RQ; 454 kg final RQ

#### SARA 311/312

Acute Health: Yes 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
Potassium hydroxide	1310-58-3	Yes	Yes	Yes	Yes	Yes

#### California Proposition 65

Not regulated under California Proposition 65

#### 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:

#### Potassium hydroxide (1310-58-3)

1 %

#### WHMIS Classification

E

#### 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

#### Potassium hydroxide (1310-58-3)

ID Number 345, hazard class 1 - low hazard to waters

#### EU Marking and Labelling

#### Symbols

Xi Irritant

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## Risk Phrases

**R36/38** Irritating to eyes and skin.

## Safety Phrases

**S26** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**S37** Wear suitable gloves.

**S60** This material and its container must be disposed of as hazardous waste.

## 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.

#### Potassium hydroxide (1310-58-3)

Deleterious, >5%; Deleterious, 100%

### 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.

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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

**R22** Harmful if swallowed.

**R35** Causes severe burns.

### 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:** 2/14/2012

End of Sheet VEN-184