



a member of the Roche Group

## Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

### \* \* \* 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:** OptiView DAB

**Product Number(s)**

06386466001, 253-4582, 760-700

**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:** liquid

**Major Health Hazards:** cancer

#### POTENTIAL HEALTH EFFECTS

##### Inhalation

**Short Term:** irritation, chest pain

**Long Term:** cancer

##### Skin

**Short Term:** irritation, allergic reactions

**Long Term:** irritation, allergic reactions, cancer

##### Eye

**Short Term:** irritation

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

##### Ingestion

**Short Term:** nausea, vomiting, diarrhea

**Long Term:** kidney damage, cancer

#### 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	---	---
25322-68-3	POLYETHYLENE GLYCOL 8000 500-038-2	3-7	Xn	R:21/22
7411-49-6	3,3'-DIAMINOBENZIDINE TETRAHYDROCHLORIDE 231-018-9	<1	Xn T N	R:22-45-50-53
9002-92-0	BRIJ 35 500-002-6	<1	---	---

# Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

7631-90-5	SODIUM BISULFITE 231-548-0	<0.1	Xn	R:22-31
-----------	-------------------------------	------	----	---------

## Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Salts of benzidine, Benzidine compounds, 3,3'-Diaminobenzidine salts.

## \* \* \* 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.

### Extinguishing Media

regular dry chemical, carbon dioxide, water, regular foam

### 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.

### 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\* \* \*

### 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. Keep separated from incompatible substances.

# Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

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

### Exposure Limits

#### POLYETHYLENE GLYCOL 8000 (25322-68-3)

**Austria:** 4000 mg/m<sup>3</sup> STEL (average molecular weight 200-400, inhalable fraction, 4 X 15 min)  
1000 mg/m<sup>3</sup> MAK (average molecular weight 200-400, inhalable fraction)

**Germany:** 1000 mg/m<sup>3</sup> TWA (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, average molecular weight 200-400, inhalable fraction, exposure factor 8)

**Germany (DFG):** 1000 mg/m<sup>3</sup> MAK (average molecular weight 200-600, inhalable fraction)  
8000 mg/m<sup>3</sup> Peak (average molecular weight 200-600, inhalable fraction)

#### 3,3'-DIAMINOBENZIDINE TETRAHYDROCHLORIDE (7411-49-6)

**Austria:** skin notation (related to Salts of benzidine)

**Germany (DFG):** skin notation (related to Salts of benzidine)

**Greece:** 0.1 % (per weight concentration limit for exemption, related to Salts of benzidine)

**Ireland:** 0.1% per weight concentration limit for exemption (related to Salts of benzidine)

#### SODIUM BISULFITE (7631-90-5)

**ACGIH:** 5 mg/m<sup>3</sup> TWA

**NIOSH:** 5 mg/m<sup>3</sup> TWA

**OSHA:** 5 mg/m<sup>3</sup> TWA

**Belgium:** 5 mg/m<sup>3</sup> TWA

**Denmark:** 5 mg/m<sup>3</sup> TWA

**France:** 5 mg/m<sup>3</sup> VME

**Greece:** 5 mg/m<sup>3</sup> TWA

**Ireland:** 5 mg/m<sup>3</sup> TWA

**Portugal:** 5 mg/m<sup>3</sup> TWA

**Spain:** 5 mg/m<sup>3</sup> VLA-ED

**United Kingdom:** 15 mg/m<sup>3</sup> STEL (calculated)

5 mg/m<sup>3</sup> TWA

### 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>	Liquid	<b>Appearance:</b>	liquid
<b>Physical Form:</b>	liquid	<b>Odor:</b>	Not available
<b>Odor Threshold:</b>	Not available	<b>pH:</b>	2.3
<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>	1.007 mg/L
<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.

# Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

## Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

## Materials to Avoid

acids, bases, oxidizing materials

## 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:

##### **POLYETHYLENE GLYCOL 8000 (25322-68-3)**

Oral LD50 Rat 28 g/kg; Dermal LD50 Rabbit >20 g/kg

##### **BRIJ 35 (9002-92-0)**

Oral LD50 Rat 1 g/kg

##### **SODIUM BISULFITE (7631-90-5)**

Oral LD50 Rat 1420 mg/kg

#### RTECS Acute Toxicity (selected)

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

##### **POLYETHYLENE GLYCOL 8000 (25322-68-3)**

**Oral:** 22 gm/kg Oral Rat LD50; >50 gm/kg Oral Rat LD50; 31600 mg/kg Oral Rat LD50; 28 gm/kg Oral Rat LD50; 31640 mg/kg Oral Rat LD50; 27500 mg/kg Oral Rat LD50; 50 gm/kg Oral Rat LD50; 30200 mg/kg Oral Rat LD50; 50 gm/kg Oral Rat LD50; >50 gm/kg Oral Rat LD50; 1054 mg/kg Oral Rat LD50; 600 mg/kg Oral Rat LD50; 51200 mg/kg Oral Rat LD50; 32 gm/kg Oral Rat LD50; 51310 mg/kg Oral Rat LD50; >4 gm/kg Oral Rat LD50; 45 gm/kg Oral Rat LD50; 44200 mg/kg Oral Rat LD50; 30 gm/kg Oral Rat LD50; 50 gm/kg Oral Rat LD50; 820 mg/kg Oral Rat LD50

**Skin:** >20 gm/kg Skin Rabbit LD50; >20 mL/kg Skin Rabbit LD50; >20 gm/kg Skin Rabbit LD50; >20 gm/kg Skin Rabbit LD50; >20 gm/kg Skin Rabbit LD50; 1800 uL/kg Skin Rabbit LD50

##### **BRIJ 35 (9002-92-0)**

**Oral:** 1 gm/kg Oral Rat LD50; 8600 mg/kg Oral Rat LD50; 8600 mg/kg Oral Rat LD50; 4150 mg/kg Oral Rat LD50

### Acute Toxicity Level

##### **POLYETHYLENE GLYCOL 8000 (25322-68-3)**

**Moderately Toxic:** dermal absorption, ingestion

**Non Toxic:** ingestion

##### **BRIJ 35 (9002-92-0)**

**Moderately Toxic:** ingestion

**Slightly Toxic:** ingestion

##### **SODIUM BISULFITE (7631-90-5)**

**Moderately Toxic:** ingestion

### Irritation/Corrosivity

#### RTECS Irritation

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

##### **POLYETHYLENE GLYCOL 8000 (25322-68-3)**

500 mg/48 hour Skin Human; 500 mg/24 hour Eyes Rabbit mild; 500 mg Eyes Rabbit mild; 500 mg/24 hour Eyes Rabbit mild; 500 mg Eyes Rabbit mild; 500 mg Eyes Rabbit mild; 500 mg Eyes Rabbit mild; 500 mg/24 hour Eyes Rabbit mild; 100 uL Eyes Rabbit mild; 500 mg Eyes Rabbit mild; 500 mg/24 hour Eyes Rabbit mild; 500 mg/open Skin Rabbit mild; 500 mg/open Skin Rabbit mild; 500 mg/24 hour Skin Rabbit mild; 10 mg/24 hour open Skin Rabbit mild; 500 mg Skin Rabbit mild; 500 mg/24 hour Skin Rabbit mild

# Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

## BRIJ 35 (9002-92-0)

6 mg/3 day(s) intermittent Skin Human moderate; 100 mg Eyes Rabbit; 10 mg Eyes Rabbit; 750 ug/24 hour Eyes Rabbit severe; 100 mg Skin Rabbit; 500 mg/24 hour Skin Rabbit mild; 75 mg/24 hour Skin Rabbit mild; 500 mg/24 hour Skin Rabbit moderate; 1 percent Skin Woman

## Local Effects

### BRIJ 35 (9002-92-0)

Irritant: eye

### SODIUM BISULFITE (7631-90-5)

Irritant: inhalation, skin, eye

## Target Organs

### SODIUM BISULFITE (7631-90-5)

immune system (sensitizer)

## Carcinogenicity

### Component Carcinogenicity

#### 3,3'-DIAMINOBENZIDINE TETRAHYDROCHLORIDE (7411-49-6)

Austria: Group A1 Carcinogen (related to Salts of benzidine)

Denmark: Present (related to Salts of benzidine)

Germany: Category 3B (could be carcinogenic for man)

Italy: Category 1 Carcinogen (related to Salts of benzidine)

Netherlands: Present (related to Salts of benzidine)

Spain: Known human carcinogen (related to Salts of benzidine)

#### SODIUM BISULFITE (7631-90-5)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

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

Portugal: A4 - Not Classifiable as a Human Carcinogen

## 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

kidney disorders

## Additional Data

IARC has concluded that Benzidine and its salts are carcinogenic.

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

## Component Analysis - Aquatic Toxicity

### POLYETHYLENE GLYCOL 8000 (25322-68-3)

Fish: 24 Hr LC50 Carassius auratus: >5000 mg/L (PEG 200, 400, 800)

### SODIUM BISULFITE (7631-90-5)

Fish: 96 Hr LC50 Gambusia affinis: 240 mg/L [static]

Invertebrate: 48 Hr EC50 Daphnia magna: 119 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.

# Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

## \* \* \* 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.

#### **SODIUM BISULFITE (7631-90-5)**

CERCLA: 5000 lb final RQ; 2270 kg final RQ

### SARA 311/312

Acute Health: No 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	RI
POLYETHYLENE GLYCOL 8000	25322-68-3	No	No	Yes	No	No	No
SODIUM BISULFITE	7631-90-5	Yes	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

#### Canada WHMIS

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

#### **BRIJ 35 (9002-92-0)**

1 %

#### **SODIUM BISULFITE (7631-90-5)**

1 %

### WHMIS Classification

D2A.

### European Regulations

This preparation has been classified for the European Union according to Annex VI Directives 67/548/EEC and 99/45/EC.

# Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

## Germany Water Classification

### **POLYETHYLENE GLYCOL 8000 (25322-68-3)**

ID Number 279, hazard class 1 - low hazard to waters (footnote 11, >=4 EO)

### **BRIJ 35 (9002-92-0)**

ID Number 670, hazard class 2 - hazard to waters

### **SODIUM BISULFITE (7631-90-5)**

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

## EU Marking and Labelling

This material is not classified.

## 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.

### **BRIJ 35 (9002-92-0)**

407 1 %

## 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

R21/22 Harmful in contact with skin and if swallowed.

R22 Harmful if swallowed.

# Material Safety Data Sheet

Material Name: OptiView DAB

MSDS ID: VEN-121

R31 Contact with acids liberates toxic gas.

## 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.

“RTECS®” is a United States trademark owned and licensed under authority of the U.S. Government, by and through Accelrys, Inc. Portions ©Copyright 2011, U.S. Government. All rights reserved.

**New MSDS:** 5/17/2011

**MSDS Update:** 6/3/2011

End of Sheet VEN-121