



a member of the Roche Group

Material Safety Data Sheet

Material Name: AFB Stain

MSDS ID: 00232044

*** 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: AFB Stain

Product Number(s)

860-027, 1504081, 05279437001, 06038611001

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

Color: magenta

Physical Form: liquid

Odor: phenol odor

Major Health Hazards: cancer hazard (in humans)

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, cough

Long Term: no information on significant adverse effects

Skin

Short Term: irritation, itching

Long Term: no information on significant adverse effects

Eye

Short Term: irritation, lacrimation

Long Term: no information on significant adverse effects

Ingestion

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

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)
7732-18-5	WATER 231-791-2	>60	---	---
64-17-5	ETHYL ALCOHOL 200-578-6	<30	F	R:11
108-95-2	PHENOL 203-632-7	<10	T	R:23/24/25-34-48/20/21/22-68

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3248-91-7	MAGENTA III 221-831-7	>1	T	R:45
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*** 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 skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

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

carbon dioxide, regular dry chemical, water spray, alcohol resistant foam

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Avoid inhalation of material or combustion by-products.

Hazardous Combustion Products

Thermal decomposition or combustion products: oxides of carbon, oxides of nitrogen, hydrogen chloride gas

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Not sensitive

*** Section 6 - Accidental Release Measures***

Occupational Spill/Release

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. **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 at room temperature. See original container for storage recommendations. Keep separated from incompatible substances.

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

Exposure Limits

ETHYL ALCOHOL (64-17-5)

ACGIH: 1000 ppm STEL
NIOSH: 1000 ppm TWA; 1900 mg/m³ TWA
3300 ppm IDLH (10% LEL)
OSHA: 1000 ppm TWA; 1900 mg/m³ TWA
1000 ppm TWA; 1900 mg/m³ TWA
Austria: 2000 ppm STEL (3 X 60 min); 3800 mg/m³ STEL (3 X 60 min)
1000 ppm MAK; 1900 mg/m³ MAK
Belgium: 1000 ppm TWA; 1907 mg/m³ TWA
Denmark: 1000 ppm TWA; 1900 mg/m³ TWA
Finland: 1300 ppm STEL; 2500 mg/m³ STEL
1000 ppm TWA; 1900 mg/m³ TWA
France: 5000 ppm VLCT; 9500 mg/m³ VLCT
1000 ppm VME; 1900 mg/m³ VME
Germany: 500 ppm TWA (exposure factor 2); 960 mg/m³ TWA (exposure factor 2)
Germany (DFG): 500 ppm MAK; 960 mg/m³ MAK
1000 ppm Peak; 1920 mg/m³ Peak
Greece: 1000 ppm TWA; 1900 mg/m³ TWA
Ireland: 1000 ppm TWA; 1900 mg/m³ TWA
Netherlands: 1900 mg/m³ STEL
260 mg/m³ TWA
skin notation
Portugal: 1000 ppm TWA
Spain: 1000 ppm VLA-ED; 1910 mg/m³ VLA-ED
Sweden: 500 ppm LLV; 1000 mg/m³ LLV
1000 ppm STV; 1900 mg/m³ STV
United Kingdom: 3000 ppm STEL (calculated); 5760 mg/m³ STEL (calculated)
1000 ppm TWA; 1920 mg/m³ TWA

PHENOL (108-95-2)

ACGIH: 5 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route
250 mg/g creatinine Medium: urine Time: end of shift Parameter: Phenol with hydrolysis
(background, nonspecific)
NIOSH: 5 ppm TWA; 19 mg/m³ TWA
15.6 ppm Ceiling (15 min); 60 mg/m³ Ceiling (15 min)
Potential for dermal absorption
250 ppm IDLH
OSHA: 5 ppm TWA; 19 mg/m³ TWA
Prevent or reduce skin absorption
5 ppm TWA; 19 mg/m³ TWA
prevent or reduce skin absorption
Austria: 2 ppm MAK; 7.8 mg/m³ MAK
skin notation
Belgium: 2 ppm TWA; 7.8 mg/m³ TWA
Skin
Denmark: 1 ppm TWA; 4 mg/m³ TWA
Potential for cutaneous absorption
Finland: 5 ppm STEL; 20 mg/m³ STEL
2 ppm TWA; 8 mg/m³ TWA
Potential for cutaneous absorption
1.3 mmol/L Medium: urine Time: end of the shift Parameter: Total phenol
France: 4 ppm VLCT (restrictive limit); 15.6 mg/m³ VLCT (restrictive limit)
2 ppm VME (restrictive limit); 7.8 mg/m³ VME (restrictive limit)
Risk of cutaneous absorption
Germany: 2 ppm TWA (exposure factor 2); 8 mg/m³ TWA (exposure factor 2)
skin notation
Germany (DFG): skin notation

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Greece: 10 ppm STEL; 38 mg/m³ STEL
5 ppm TWA; 19 mg/m³ TWA
skin - potential for cutaneous absorption

Ireland: 2 ppm TWA; 8 mg/m³ TWA
Potential for cutaneous absorption

Italy: 2 ppm TWA; 7.8 mg/m³ TWA
skin - potential for cutaneous absorption

Japan: 5 ppm OEL; 19 mg/m³ OEL
May cause substantial skin absorption

Netherlands: 8 mg/m³ TWA
skin notation

Portugal: 5 ppm TWA
skin - potential for cutaneous exposure

Spain: 2 ppm VLA-ED (indicative limit value); 8 mg/m³ VLA-ED (indicative limit value)
skin - potential for cutaneous exposure

Sweden: 1 ppm LLV; 4 mg/m³ LLV
2 ppm STV; 8 mg/m³ STV
Skin notation

United Kingdom: 6 ppm STEL (calculated); 23.4 mg/m³ STEL (calculated)
2 ppm TWA; 7.8 mg/m³ TWA
Potential for cutaneous absorption

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, nitrile

Respiratory Protection

No respirator is required under normal conditions of use.

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

Physical State:	Liquid	Appearance:	opaque, magenta, liquid
Color:	magenta	Physical Form:	liquid
Odor:	phenol odor	Odor Threshold:	Not available
pH:	4.5	Boiling Point:	Not available
Decomposition:	Not available	Flash Point:	Not available
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. Containers may rupture or explode if exposed to heat.
Keep out of water supplies and sewers.

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Materials to Avoid

oxidizing materials

Decomposition Products

Thermal decomposition or combustion products: oxides of carbon, oxides of nitrogen, hydrogen chloride gas

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:

WATER (7732-18-5)

Oral LD50 Rat >90 mL/kg

ETHYL ALCOHOL (64-17-5)

Oral LD50 Rat 7060 mg/kg; Inhalation LC50 Rat 124.7 mg/L 4 h

PHENOL (108-95-2)

Oral LD50 Rat 317 mg/kg; Dermal LD50 Rat 525 mg/kg; Dermal LD50 Rabbit 630 mg/kg; Inhalation LC50 Rat 316 mg/m³ 4 h

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

ETHYL ALCOHOL (64-17-5)

Inhalation: 5900 mg/m³/6 hour Inhalation Rat LC50; 20000 ppm/10 hour Inhalation Rat LC50;
124700 mg/m³/4 hour Inhalation Rat LC50

Oral: 7 gm/kg Oral Rat LD50; 15010 mg/kg Oral Rat LD50; 7060 mg/kg Oral Rat LD50

PHENOL (108-95-2)

Inhalation: 316 mg/m³/4 hour Inhalation Rat LC50; 316 mg/m³ Inhalation Rat LC50

Oral: 512 mg/kg Oral Rat LD50; 317 mg/kg Oral Rat LD50

Skin: 630 mg/kg Skin Rabbit LD50

Acute Toxicity Level

ETHYL ALCOHOL (64-17-5)

Slightly Toxic: inhalation, ingestion

PHENOL (108-95-2)

Highly Toxic: inhalation

Toxic: dermal absorption, ingestion

Irritation/Corrosivity

RTECS Irritation

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

ETHYL ALCOHOL (64-17-5)

500 mg/24 hour Eyes Rabbit mild; 100 uL Eyes Rabbit moderate; 100 mg/4 second(s) Eyes Rabbit moderate; 500 mg Eyes Rabbit severe; 400 mg/open Skin Rabbit mild; 20 mg/24 hour Skin Rabbit moderate

PHENOL (108-95-2)

400 uL/30 second(s) Skin Pig severe; 5 mg/30 second(s) Eyes Rabbit mild; 5 mg Eyes Rabbit severe; 100 mg Skin Rabbit mild; 535 mg/open Skin Rabbit severe

Local Effects

ETHYL ALCOHOL (64-17-5)

Irritant: inhalation, skin, eye

PHENOL (108-95-2)

Corrosive: inhalation, skin, eye, ingestion

Target Organs

ETHYL ALCOHOL (64-17-5)

central nervous system, liver

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PHENOL (108-95-2)

central nervous system

Carcinogenicity

Component Carcinogenicity

ETHYL ALCOHOL (64-17-5)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

OSHA: Present

IARC: Monograph 100E [in preparation] (in alcoholic beverages); Monograph 96 [in preparation] (in alcoholic beverages) (Group 1 (carcinogenic to humans))

Germany: Category 5 (low carcinogenic potency)

Netherlands: Present

Portugal: A4 - Not Classifiable as a Human Carcinogen

PHENOL (108-95-2)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))

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

Portugal: A4 - Not Classifiable as a Human Carcinogen

MAGENTA III (3248-91-7)

OSHA: Present

IARC: Monograph 99 [2010]; Monograph 57 [1993] (Group 2B (possibly carcinogenic to humans))

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

None known.

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*** Section 12 - Ecological Information***

Component Analysis - Aquatic Toxicity

ETHYL ALCOHOL (64-17-5)

Fish: 96 Hr LC50 Oncorhynchus mykiss: 12.0 - 16.0 mL/L [static]; 96 Hr LC50 Pimephales promelas: >100 mg/L [static]; 96 Hr LC50 Pimephales promelas: 13400 - 15100 mg/L [flow-through]

Invertebrate: 48 Hr LC50 Daphnia magna: 9268 - 14221 mg/L; 24 Hr EC50 Daphnia magna: 10800 mg/L; 48 Hr EC50 Daphnia magna: 2 mg/L [Static]

PHENOL (108-95-2)

Fish: 96 Hr LC50 Pimephales promelas: 11.9-50.5 mg/L [flow-through]; 96 Hr LC50 Pimephales promelas: 20.5-25.6 mg/L [static]; 96 Hr LC50 Pimephales promelas: 32 mg/L; 96 Hr LC50 Oncorhynchus mykiss: 5.449-6.789 mg/L [flow-through]; 96 Hr LC50 Oncorhynchus mykiss: 7.5-14 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 4.23-7.49 mg/L [semi-static]; 96 Hr LC50 Oncorhynchus mykiss: 5.0-12.0 mg/L; 96 Hr LC50 Lepomis macrochirus: 13.5 mg/L [static]; 96 Hr LC50 Lepomis macrochirus: 11.9-25.3 mg/L [flow-through]; 96 Hr LC50 Lepomis macrochirus: 11.5 mg/L [semi-static]; 96 Hr LC50 Poecilia reticulata: 34.09-47.64 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 31 mg/L [semi-static]; 96 Hr LC50 Brachydanio rerio: 27.8 mg/L; 96 Hr LC50 Cyprinus carpio: 0.00175 mg/L [semi-static]; 96 Hr LC50 Oryzias latipes: 33.9-43.3 mg/L [flow-through]; 96 Hr LC50 Oryzias latipes: 23.4-36.6 mg/L [static]

Algae: 96 Hr EC50 Pseudokirchneriella subcapitata: 46.42 mg/L; 96 Hr EC50 Pseudokirchneriella subcapitata: 0.0188 - 0.1044 mg/L [static]; 72 Hr EC50 Desmodesmus subspicatus: 187 - 279 mg/L [static]

Invertebrate: 48 Hr EC50 Daphnia magna: 4.24 - 10.7 mg/L [Static]; 48 Hr EC50 Daphnia magna: 10.2 - 15.5 mg/L

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

PHENOL (108-95-2)

RCRA: waste number U188

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*** 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.

PHENOL (108-95-2)

SARA 302/304: 500 lb lower TPQ; 10000 lb upper TPQ
1000 lb EPCRA RQ

SARA 313: 1.0 % de minimis concentration

CERCLA: 1000 lb final RQ; 454 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
ETHYL ALCOHOL	64-17-5	Yes	Yes	Yes	Yes	Yes	Yes
PHENOL	108-95-2	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 reproductive/developmental effects.

Canadian Regulations

Canada WHMIS

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

ETHYL ALCOHOL (64-17-5)

0.1 %

PHENOL (108-95-2)

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.

Germany Water Classification

ETHYL ALCOHOL (64-17-5)

ID Number 96, hazard class 1 - low hazard to waters (footnote 10)

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PHENOL (108-95-2)

ID Number 170, hazard class 2 - 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.

PHENOL (108-95-2)

349 1 %

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.

PHENOL (108-95-2)

Deleterious, 5%; Deleterious

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.

ETHYL ALCOHOL (64-17-5)

Flammable substance

Industrial Safety and Health Law - Label Disclosure

This list contains those harmful substances present in this product whose names are to be indicated on a container label as specified by Article 18 of the Enforcement Order of the Industrial Safety and Health Law.

PHENOL (108-95-2)

0.1 % weight

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.

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R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R34 Causes burns.

R45 May cause cancer.

R48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

R68 Possible risk of irreversible effects.

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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MSDS Update: 1/31/2011

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