a member of the Roche Group

Material Safety Data Sheet

Material Name: DAPI Stain **MSDS ID: VEN-080**

* * * 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: DAPI Stain

Product Number(s)

854-4552, 06538045001

Product Use

clinical/research

* * * 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
Major Health Hazards: respiratory tract irritation, skin irritation, eye irritation

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, cough, chest pain, difficulty breathing
Long Term: irritation

Skin

Short Term: irritation, allergic reactions
Long Term: irritation, allergic reactions

Eye

Short Term: irritation, eye damage
Long Term: irritation

Ingestion

Short Term: irritation
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	Non-hazardous	60-100	---	---
77-86-1	Tris(hydroxymethyl)aminomethane 201-064-4	1-5	Xi	R:36-37-38
64-19-7	Acetic acid 200-580-7	<1	C	R:10-35
26628-22-8	Sodium azide 247-852-1	<0.1	T+ N	R:28-32-50/53
55965-84-9	Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone	<0.001	T N	R:23/24/25-34- 43-50/53

* * * 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, regular foam, water

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, oxides of nitrogen

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. Keep separated from incompatible substances.

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

Exposure Limits

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

Sodium azide (26628-22-8)

ACGIH:	0.29 mg/m3 Ceiling (as NaN3); 0.11 ppm Ceiling (as Hydrazoic acid, vapor)
NIOSH:	0.1 ppm Ceiling (as HN3); 0.3 mg/m3 Ceiling (as NaN3)
	Potential for dermal absorption
OSHA:	0.1 ppm Ceiling (as HN3); 0.3 mg/m3 Ceiling (as NaN3)
	Prevent or reduce skin absorption
EEC:	0.1 mg/m3 TWA
	0.3 mg/m3 STEL
	Possibility of significant uptake through the skin
Austria:	0.3 mg/m3 STEL (4 X 15 min)
	0.1 mg/m3 MAK
	skin notation
Belgium:	Skin
Denmark:	0.1 mg/m3 TWA
	Potential for cutaneous absorption
Finland:	0.3 mg/m3 STEL
	0.1 mg/m3 TWA
	Potential for cutaneous absorption
France:	0.3 mg/m3 VLCT (restrictive limit)
	0.1 mg/m3 VME (restrictive limit)
	Risk of cutaneous absorption
Germany:	0.2 mg/m3 TWA (exposure factor 2)
Germany (DFG):	0.2 mg/m3 MAK (inhalable fraction)
	0.4 mg/m3 Peak (inhalable fraction)
Greece:	0.1 ppm STEL; 0.3 mg/m3 STEL
	0.1 ppm TWA; 0.3 mg/m3 TWA

Ireland:	0.3 mg/m3 STEL (as NaN3) 0.1 mg/m3 TWA (as NaN3) Potential for cutaneous absorption
Italy:	0.1 mg/m3 TWA skin - potential for cutaneous absorption 0.3 mg/m3 STEL
Netherlands:	0.3 mg/m3 STEL 0.1 mg/m3 TWA skin notation
Portugal:	0.29 mg/m3 Ceiling (as NaN3); 0.11 ppm Ceiling (as Hydrazoic acid, vapor)
Spain:	0.3 mg/m3 VLA-EC 0.1 mg/m3 VLA-ED (indicative limit value) skin - potential for cutaneous exposure
Sweden:	0.1 mg/m3 LLV 0.3 mg/m3 STV Skin notation
United Kingdom:	0.3 mg/m3 STEL (as NaN3) 0.1 mg/m3 TWA (as NaN3) 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.

Respiratory Protection

No respirator is required under normal conditions of use.

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

Physical State:	Liquid	**Appearance:**	Not available
Physical Form:	liquid	**Odor:**	Not available
Odor Threshold:	Not available	**pH:**	7.5-7.7
Melting/Freezing Point:	Not available	**Boiling Point:**	Not available
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
Specific Gravity (water = 1):	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

acids, bases, metals, oxidizing materials

Decomposition Products

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

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:

Tris(hydroxymethyl)aminomethane (77-86-1)

Oral LD50 Rat 5900 mg/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

Sodium azide (26628-22-8)

Oral LD50 Rat 27 mg/kg; Dermal LD50 Rat 50 mg/kg; Dermal LD50 Rabbit 20 mg/kg

Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)

Oral LD50 Rat 53 mg/kg

RTECS Acute Toxicity (selected)

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

Tris(hydroxymethyl)aminomethane (77-86-1)

Oral: >3000 mg/kg Oral Rat 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 uL/kg Skin Rabbit LD50

Acute Toxicity Level

Tris(hydroxymethyl)aminomethane (77-86-1)

Slightly Toxic: ingestion

Acetic acid (64-19-7)

Toxic: inhalation

Moderately Toxic: dermal absorption,ingestion

Sodium azide (26628-22-8)

Highly Toxic: inhalation,dermal absorption,ingestion

Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)

Toxic: ingestion

Irritation/Corrosivity

RTECS Irritation

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

Tris(hydroxymethyl)aminomethane (77-86-1)

25 percent Skin Rabbit moderate; 500 mg Skin Rabbit severe; 100 mg Skin Rat

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

Tris(hydroxymethyl)aminomethane (77-86-1)

Irritant: inhalation,skin,eye

Acetic acid (64-19-7)

Corrosive: inhalation,skin,eye,ingestion

Sodium azide (26628-22-8)

Irritant: inhalation,skin,eye

Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)

Corrosive: inhalation,skin,eye,ingestion

Target Organs

Sodium azide (26628-22-8)

blood

Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)

immune system (sensitizer)

Carcinogenicity
Component Carcinogenicity
Acetic acid (64-19-7)
Denmark: Present
Sodium azide (26628-22-8)
ACGIH: A4 - Not Classifiable as a Human Carcinogen
Portugal: A4 - Not Classifiable as a Human Carcinogen
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
None known.

* * * Section 12 - Ecological Information* * *

Component Analysis - Aquatic Toxicity
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]
Sodium azide (26628-22-8)
Fish: 96 Hr LC50 Oncorhynchus mykiss: 0.8 mg/L; 96 Hr LC50 Lepomis macrochirus: 0.7 mg/L; 96 Hr LC50 Pimephales promelas: 5.46 mg/L [flow-through]
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.
Component Waste Numbers
Sodium azide (26628-22-8)
RCRA: waste number P105

* * * 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

Sodium azide (26628-22-8)

SARA 302/304: 500 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solution form)
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: 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	RI
Acetic acid	64-19-7	Yes	Yes	Yes	Yes	Yes	Yes
Sodium azide	26628-22-8	Yes	Yes	Yes	Yes	Yes	Yes

California Proposition 65

Not regulated under California Proposition 65

Canadian Regulations

WHMIS Classification

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

Tris(hydroxymethyl)aminomethane (77-86-1)

ID Number 4650, hazard class 2 - hazard to waters

Acetic acid (64-19-7)

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

Sodium azide (26628-22-8)

ID Number 636, hazard class 2 - hazard to waters

Mixture, 3(2H)-isothiazolone, 5-chloro-2-methyl- with 2-methyl-3(2H)-isothiazolone (55965-84-9)

ID Number 2959, hazard class 3 - severe 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.

Sodium azide (26628-22-8)

11

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.

Sodium azide (26628-22-8)

Poisonous, 0.1%

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

Sodium azide (26628-22-8)

Explosive 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.

* * * 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.

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

R28 Very toxic if swallowed.

R32 Contact with acids liberates very toxic gas.
R34 Causes burns.
R35 Causes severe burns.
R36 Irritating to eyes.
R37 Irritating to respiratory system.
R38 Irritating to skin.
R43 May cause sensitization by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.

New MSDS: 11/30/2010

End of Sheet VEN-080