

# SAFETY DATA SHEET

Version 8.15  
Revision Date 09/08/2024  
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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : Papanicolaou's solution 1a Harris'  
hematoxylin solution for cytology

Product Number : 1.09253  
Catalogue No. : 109253  
Brand : Millipore

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : In vitro diagnostic reagent, Reagent for analysis  
Uses advised against : This product is not intended for consumer use. The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### 1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-  
527-3887 CHEMTREC (International) 24  
Hours/day; 7 Days/week

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Serious eye damage (Category 1), H318  
Specific target organ toxicity - repeated exposure, Oral (Category 2), Kidney, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard Statements

H318

Causes serious eye damage.

H373

May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary Statements

P260

Do not breathe mist or vapors.

P280

Wear eye protection/ face protection.

P305 + P351 + P338 +

P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P314

Get medical advice/ attention if you feel unwell.

P501

Dispose of contents/ container to an approved waste disposal plant.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Component	Classification	Concentration
<b>ethylene glycol</b>		
CAS-No.	107-21-1	Acute Tox. 4; STOT RE 2; H302, H373
EC-No.	203-473-3	
Index-No.	603-027-00-1	
Registration number	01-2119456816-28-XXXX	
<b>ethanol</b>		
CAS-No.	64-17-5	Flam. Liq. 2; Eye Irrit. 2A; H225, H319 Concentration limits: >= 50 %: Eye Irrit. 2A, H319;
EC-No.	200-578-6	
Index-No.	603-002-00-5	
Registration number	01-2119457610-43-XXXX	
<b>aluminium sulfate</b>		
CAS-No.	10043-01-3	Met. Corr. 1; Eye Dam. 1; H290, H318
EC-No.	233-135-0	
Registration number	01-2119531538-36-XXXX	

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

Sulfur oxides

Aluminum oxide

Not combustible.

Ambient fire may liberate hazardous vapours.

### 5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

### 5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent and neutralising material (e.g. Chemizorb® H<sup>+</sup>, Merck Art. No. 101595). Dispose of properly. Clean up affected area.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities****Storage conditions**

Tightly closed.

Recommended storage temperature see product label.

**Storage class**

Storage class (TRGS 510): 12: Non Combustible Liquids

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Ingredients with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
ethylene glycol	107-21-1	TWA	25 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		
		STEL	50 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Not classifiable as a human carcinogen		

		STEL	10 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
		Not classifiable as a human carcinogen		
		C	40 ppm 100 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
ethanol	64-17-5	TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		STEL	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Confirmed animal carcinogen with unknown relevance to humans		
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		PEL	1,000 ppm 1,900 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
aluminium sulfate	10043-01-3	TWA	2 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		PEL	2 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

## 8.2 Exposure controls

### Appropriate engineering controls

Change contaminated clothing. Wash hands after working with substance.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

#### Skin protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

#### Body Protection

protective clothing

#### Respiratory protection

Recommended Filter type: filter ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.  
required when vapours/aerosols are generated.  
required when vapours/aerosols are generated.  
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### **Control of environmental exposure**

Do not let product enter drains.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

a) Appearance	Form: liquid Color: reddish-violet
b) Odor	odorless
c) Odor Threshold	Not applicable
d) pH	2.5 - 3.0 at 20 °C (68 °F)
e) Melting point/freezing point	No data available
f) Initial boiling point and boiling range	ca.100 °C ca.212 °F at 1,013 hPa
g) Flash point	( )Not applicable
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Density	1.04 g/cm <sup>3</sup> at 20 °C (68 °F)
Relative density	No data available
n) Water solubility	soluble
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	Not applicable
q) Decomposition temperature	No data available

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- r) Viscosity No data available
- s) Explosive properties Not applicable
- t) Oxidizing properties none

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
The generally known reaction partners of water.  
Violent reactions possible with:  
The generally known reaction partners of water.

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

No data available

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

#### Acute toxicity

Acute toxicity estimate Oral - > 5,000 mg/kg  
(Calculation method)

Symptoms: Possible symptoms:, mucosal irritations

Acute toxicity estimate Dermal - > 5,000 mg/kg  
(Calculation method)

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

Remarks: Mixture causes serious eye damage.

#### Respiratory or skin sensitization

No data available

### **Germ cell mutagenicity**

No data available

### **Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

### **Reproductive toxicity**

No data available

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

Mixture may cause damage to organs through prolonged or repeated exposure.

- Kidney

### **Aspiration hazard**

No data available

## **11.2 Additional Information**

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## **Components**

### **ethylene glycol**

#### **Acute toxicity**

Acute toxicity estimate Oral - 500.1 mg/kg

(Expert judgment)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

LC50 Inhalation - Rat - male and female - 6 h - > 2.5 mg/l - aerosol

Remarks: (ECHA)

LD50 Dermal - Mouse - male and female - > 3,500 mg/kg

Remarks: (ECHA)

#### **Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 20 h

Remarks: (ECHA)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation - 24 h

Remarks: (ECHA)



**Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Result: negative

Species: Rat - male and female

Result: negative

Remarks: (ECHA)

**Carcinogenicity**

This product is or contains a component that is probably not carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

**Reproductive toxicity**

Laboratory experiments have shown teratogenic effects.

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Oral - May cause damage to organs through prolonged or repeated exposure.

- Kidney

**Aspiration hazard**

No data available

**ethanol****Acute toxicity**

LD50 Oral - Rat - male and female - 10,470 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 124.7 mg/l - vapor

(OECD Test Guideline 403)

Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 24 h

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes serious eye irritation.

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative  
(OECD Test Guideline 406)  
Remarks: (in analogy to similar products)  
The value is given in analogy to the following substances: Methanol

**Germ cell mutagenicity**

Test Type: Ames test  
Test system: Salmonella typhimurium  
Result: negative  
Test Type: In vitro mammalian cell gene mutation test  
Test system: mouse lymphoma cells  
Result: negative  
Method: OECD Test Guideline 478  
Species: Mouse - male  
Result: Positive results were obtained in some in vivo tests.

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

**Aspiration hazard**

No data available

**aluminium sulfate**

**Acute toxicity**

LD50 Oral - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 401)  
Inhalation: No data available  
LD50 Dermal - Rabbit - male and female - > 5,000 mg/kg  
(OECD Test Guideline 402)  
No data available

**Skin corrosion/irritation**

Skin - Rabbit  
Result: No skin irritation - 4 h  
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: Irreversible effects on the eye  
(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: negative  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: negative

Test Type: Micronucleus test

Test system: Human lymphocytes

Result: negative

Method: OECD Test Guideline 474

Species: Rat - male and female

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: aluminium hydroxide

Species: Rat

Remarks: Cytogenetic analysis

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

**Aspiration hazard**

No data available

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**SECTION 12: Ecological information**

**12.1 Toxicity**

**Mixture**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Endocrine disrupting properties**

No data available

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## 12.7 Other adverse effects

No data available

### Components

#### ethylene glycol

Toxicity to fish	static test LC50 - Pimephales promelas (fathead minnow) - 72,860 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test NOEC - Pseudokirchneriella subcapitata (green algae) - > 100 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to fish(Chronic toxicity)	flow-through test LC50 - Menidia peninsulae (tidewater silverside) - > 1,500 mg/l - 28 d Remarks: (ECHA) The value is given in analogy to the following substances: triethylene glycol
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Ceriodaphnia dubia (water flea) - 8,590 mg/l - 7 d (US-EPA)

#### ethanol

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 15,300 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	static test LC50 - Ceriodaphnia dubia (water flea) - 5,012 mg/l - 48 h Remarks: (ECHA)
Toxicity to algae	static test ErC50 - Chlorella vulgaris (Fresh water algae) - 275 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	static test IC50 - activated sludge - > 1,000 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to fish(Chronic toxicity)	semi-static test NOEC - Danio rerio (zebra fish) - 250 mg/l - 120 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Daphnia magna (Water flea) - 9.6 mg/l - 9 d Remarks: (ECHA)

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## aluminium sulfate

Toxicity to fish	semi-static test LC50 - Danio rerio (zebra fish) - > 87.5 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 200 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Pseudokirchneriella subcapitata (microalgae) - 0.24 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	static test EC50 - activated sludge - > 200 mg/l - 3 h (OECD Test Guideline 209)
Toxicity to fish(Chronic toxicity)	semi-static test NOEC - Salvelinus fontinalis (Brook trout) - 0.024 mg/l - 60 d Remarks: (ECHA)
	semi-static test NOEC - Salvelinus fontinalis (Brook trout) - 0.024 mg/l - 60 d Remarks: (ECHA)
	semi-static test NOEC - Salvelinus fontinalis (Brook trout) - 0.024 mg/l - 60 d Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity)	semi-static test NOEC - Ceriodaphnia dubia (water flea) - 3.8 mg/l - 8 d (US-EPA)

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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**SECTION 14: Transport information****DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

**Further information**

Not classified as dangerous in the meaning of transport regulations.

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**SECTION 15: Regulatory information****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethyl Methyl Ketone	78-93-3	5000	5000 (D035)
Ethyl Methyl Ketone	78-93-3	100	100 (F005)

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

ethylene glycol 107-21-1 &gt;= 5 - &lt; 10 %

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

ethylene glycol 107-21-1 &gt;= 5 - &lt; 10 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

ethylene glycol 107-21-1 &gt;= 5 - &lt; 10 %

ethanol 64-17-5 &gt;= 1 - &lt; 5 %

**Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

aluminium sulfate 10043-01-3 &gt;= 1 - &lt; 5 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

aluminium sulfate      10043-01-3       $\geq 1 - < 5 \%$

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

### **US State Regulations**

#### **Massachusetts Right To Know**

water	7732-18-5
ethylene glycol	107-21-1
ethanol	64-17-5
aluminium sulfate	10043-01-3

#### **Pennsylvania Right To Know**

ethylene glycol	107-21-1
ethanol	64-17-5
aluminium sulfate	10043-01-3
Ethyl Methyl Ketone	78-93-3

#### **Maine Chemicals of High Concern**

water	7732-18-5
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#### **Vermont Chemicals of High Concern**

water	7732-18-5
ethylene glycol	107-21-1
Ethyl Methyl Ketone	78-93-3

#### **Washington Chemicals of High Concern**

water	7732-18-5
ethylene glycol	107-21-1
Ethyl Methyl Ketone	78-93-3

#### **California Prop. 65**

WARNING: This product can expose you to chemicals including ethylene glycol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### **The ingredients of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

#### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## **SECTION 16: Other information**

### **Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture

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