



# MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/21/2013

Version 1.2

## SECTION 1. Identification

### Product identifier

Product number	109215
Product name	Ziehl-Neelsen carbol-fuchsin solution for microscopy

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

Identified uses	In vitro diagnostic reagent, Reagent for analysis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   SDS Phone Support: +1-978-715-1335   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Flammable liquid, Category 3, H226  
Skin corrosion, Category 1B, H314  
Germ cell mutagenicity, Category 2, H341

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

### GHS-Labeling

#### *Hazard pictograms*



#### *Signal Word*

Danger

#### *Hazard Statements*

H226 Flammable liquid and vapor.  
H314 Causes severe skin burns and eye damage.  
H341 Suspected of causing genetic defects.

#### *Precautionary Statements*

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P210 Keep away from heat.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

## OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

## Other hazards

None known.

## SECTION 3. Composition/information on ingredients

Chemical nature Aqueous-ethanolic dye solution.

### Hazardous ingredients

*Chemical Name ( Concentration)*

CAS-No.

*ethanol ( >= 5 % - < 10 % )*

64-17-5

*Phenol ( >= 1 % - < 5 % )*

108-95-2

*New fuchsin ( >= 0.1 % - < 1 % )*

3248-91-7

*ethyl methyl ketone ( >= 0.1 % - < 1 % )*

78-93-3

## SECTION 4. First aid measures

### Description of first-aid measures

*General advice*

First aider needs to protect himself.

*Inhalation*

After inhalation: fresh air. Call in physician.

*Skin contact*

After skin contact: wash off with plenty of water. Immediately remove contaminated clothing. If available swab with polyethylene glycol 400. Call a physician immediately.

*Eye contact*

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

*Ingestion*

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation!). Call a physician immediately. Do not attempt to neutralize.

Never give anything by mouth to an unconscious person.

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

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Irritation and corrosion, Cough, Shortness of breath, respiratory arrest, Drowsiness, Dizziness, Unconsciousness, inebriation, cardiovascular disorders, collapse, Headache, confusion, death  
Risk of blindness!

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

No information available.

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## SECTION 5. Fire-fighting measures

### Extinguishing media

#### *Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

#### *Unsuitable extinguishing media*

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

### Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapors possible in the event of fire.

### Advice for firefighters

#### *Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### *Further information*

Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### Environmental precautions

Do not empty into drains. Risk of explosion.

### 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 material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

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Observe label precautions.

## *Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

## Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C (+59°F to +77°F).

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>ethanol 64-17-5</i>			
ACGIH	Short Term Exposure Limit (STEL):	1,000 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	1,000 ppm 1,900 mg/m <sup>3</sup>	
OSHA_TRANS	PEL:	1,000 ppm 1,900 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	1,000 ppm 1,900 mg/m <sup>3</sup>	
<i>Phenol 108-95-2</i>			
ACGIH	Time Weighted Average (TWA):	5 ppm	
	Skin designation:		Can be absorbed through the skin.
NIOSH/GUIDE	Skin designation:		Can be absorbed through the skin.
	Ceiling Limit Value and Time Period (if specified):	15.6 ppm 60 mg/m <sup>3</sup>	Ceiling Limit Value 15-min
	Recommended exposure limit (REL):	5 ppm 19 mg/m <sup>3</sup>	
OSHA_TRANS	Skin designation:		Can be absorbed through the skin.
	PEL:	5 ppm 19 mg/m <sup>3</sup>	
Z1A	Time Weighted Average (TWA):	5 ppm 19 mg/m <sup>3</sup>	
	Skin designation (Final Rule Limit applies):		Can be absorbed through the skin.

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

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### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

#### *Eye/face protection*

Tightly fitting safety goggles

#### *Hand 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.

#### *Other protective equipment:*

Flame retardant antistatic protective clothing

#### *Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	dark red
Odor	phenol-like
Odor Threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point	No information available.
Flash point	117 °F ( 47 °C)
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	No information available.

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Relative vapor density	No information available.
Relative density	0.99 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	at 68 °F ( 20 °C) soluble
Partition coefficient: n-octanol/water	No information available.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.

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### SECTION 10. Stability and reactivity

#### Reactivity

Vapor/air-mixtures are explosive at intense warming.

#### Chemical stability

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

#### Possibility of hazardous reactions

Violent reactions possible with:

The generally known reaction partners of water.

#### Conditions to avoid

Heating.

#### Incompatible materials

no information available

#### Hazardous decomposition products

no information available

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### SECTION 11. Toxicological information

#### Information on toxicological effects

*Likely route of exposure*

Eye contact, Skin contact

*Target Organs*

Eyes

Skin

Respiratory system

Central nervous system

Liver

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Blood  
reproductive system  
Kidney  
Lungs  
Heart  
Bladder  
Gastro-intestinal system  
Cardio-vascular system  
head  
spleen  
Respiratory organs  
Pancreas

### *Acute oral toxicity*

Acute toxicity estimate: 2,464 mg/kg

Calculation method

absorption

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

### *Acute inhalation toxicity*

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract

Acute toxicity estimate: 73.93 mg/l

Calculation method

### *Acute dermal toxicity*

absorption

Acute toxicity estimate : 7,393 mg/kg

Calculation method

### *Skin irritation*

Mixture causes burns.

### *Eye irritation*

Mixture causes serious eye damage. Risk of blindness!

### *Carcinogenicity*

Carcinogen classifications of IARC, NTP, California proposition 65 for Ethanol CAS 64-17-5 apply to beverage use only. This product is NOT intended for this use.

### *CMR effects*

Mutagenicity:

Suspected of causing genetic defects.

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

The substance or mixture is not classified as specific target organ toxicant, single exposure.

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

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

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## Carcinogenicity

IARC

Group 1: Carcinogenic to humans

New fuchsin

3248-91-7

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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.

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

## Further information

After absorption:

Systemic effects:

Headache, Drowsiness, inebriation, confusion, Unconsciousness, Dizziness, cardiovascular disorders, collapse, Changes in the blood count, respiratory arrest, death, Possible risk of irreversible effects.

Damage to:

Liver, Kidney, Cardiac

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

## Ingredients

### *ethanol*

*Acute oral toxicity*

LD50 rat: 6,200 mg/kg (IUCLID)

*Acute inhalation toxicity*

LC50 rat: 95.6 mg/l; 4 h (RTECS)

*Skin irritation*

rabbit

Result: No irritation

OECD Test Guideline 404

*Sensitization*

Sensitization test (Magnusson and Kligman):

Result: negative

(IUCLID)

*Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

### *Phenol*



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### *Acute oral toxicity*

LD50 rat: 317 mg/kg (RTECS)

LDLO human: 140 mg/kg (RTECS)

### *Acute inhalation toxicity*

LC50 rat: 0.316 mg/l; 4 h (RTECS)

### *Acute dermal toxicity*

LD50 rat: 525 - 714 mg/kg (IUCLID)

### *Skin irritation*

rabbit

Result: Causes burns.

(IUCLID)

### *Eye irritation*

rabbit

Result: Causes burns.

(IUCLID)

### *Sensitization*

Sensitization test: guinea pig

Result: negative

(IUCLID)

### *Germ cell mutagenicity*

#### *Genotoxicity in vitro*

Mutagenicity (mammal cell test):

Result: positive

(National Toxicology Program)

### Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

Mutagenicity (mammal cell test): chromosome aberration.

Result: positive

(National Toxicology Program)

### *New fuchsin*

No information available.

### *ethyl methyl ketone*

#### *Acute oral toxicity*

LD50 rat: 3,400 mg/kg

OECD Test Guideline 401

LD50 rat: > 2,600 mg/kg (IUCLID)

#### *Acute dermal toxicity*

LD50 rabbit: > 8,000 mg/kg (Lit.)

#### *Skin irritation*

rabbit

Result: slight irritation

(IUCLID)

#### *Eye irritation*

rabbit

Result: Severe irritations

(IUCLID)

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### *Sensitization*

Sensitization test: guinea pig

Result: negative

(IUCLID)

### *Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Result: negative

(IUCLID)

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

(National Toxicology Program)

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## SECTION 12. Ecological information

### **Ecotoxicity**

No information available.

### **Persistence and degradability**

No information available.

### **Bioaccumulative potential**

No information available.

### **Mobility in soil**

No information available.

## **Ingredients**

### *ethanol*

#### *Toxicity to fish*

LC50 *Leuciscus idus* (Golden orfe): 8,140 mg/l; 48 h (IUCLID)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *E.sulcatum*: 65 mg/l; 72 h (Lit.)

EC50 *Daphnia magna* (Water flea): 9,268 - 14,221 mg/l; 48 h (IUCLID)

#### *Toxicity to algae*

IC50 *Scenedesmus quadricauda* (Green algae): 5,000 mg/l; 7 d (Lit.)

#### *Toxicity to bacteria*

EC50 *Pseudomonas putida*: 6,500 mg/l; 16 h (IUCLID)

### *Biodegradability*

94 %

OECD Test Guideline 301E

Readily biodegradable.

### *Biochemical Oxygen Demand (BOD)*

930 - 1,670 mg/g (5 d)

(Lit.)

### *Theoretical oxygen demand (ThOD)*

2,100 mg/g

(Lit.)

### *Ratio COD/ThBOD*

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90 %  
(Lit.)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

### *Phenol*

#### *Toxicity to fish*

LC50 *Oncorhynchus mykiss* (rainbow trout): 5.0 mg/l; 96 h (ECOTOX Database)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 4.2 mg/l; 48 h (ECOTOX Database)

EC5 *E. sulcatum*: 33 mg/l; 72 h (IUCLID) (maximum permissible toxic concentration)

#### *Toxicity to algae*

IC50 *Pseudokirchneriella subcapitata* (green algae): 150 mg/l; 96 h  
OECD Test Guideline 201

IC5 *Scenedesmus quadricauda* (Green algae): 7.5 mg/l; 8 d (IUCLID) (maximum permissible toxic concentration)

#### *Toxicity to bacteria*

EC5 *Pseudomonas putida*: 64 mg/l; 16 h (IUCLID) (maximum permissible toxic concentration)

EC50 activated sludge: 766 mg/l; 3 h

OECD Test Guideline 209

#### *Biodegradability*

100 %; 6 d

OECD Test Guideline 302B

Easily eliminable.

85 %; 14 d

OECD Test Guideline 301C

Readily biodegradable.

#### *Biochemical Oxygen Demand (BOD)*

1,680 mg/g (5 d)  
(IUCLID)

#### *Chemical Oxygen Demand (COD)*

2,300 mg/g  
(IUCLID)

### *New fuchsin*

No information available.

### *ethyl methyl ketone*

#### *Toxicity to fish*

LC50 *Pimephales promelas* (fathead minnow): 3,220 mg/l; 96 h (IUCLID)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 5,091 mg/l; 48 h (IUCLID)

#### *Toxicity to algae*

IC5 *Scenedesmus quadricauda* (Green algae):  $\geq 4,300$  mg/l; 7 d (IUCLID)

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## *Toxicity to bacteria*

EC5 Pseudomonas putida: 1,150 mg/l; 16 h (IUCLID)

## *Biodegradability*

Readily biodegradable.

## *Theoretical oxygen demand (ThOD)*

2,440 mg/g  
(Lit.)

## *Ratio BOD/ThBOD*

BOD5 76 %  
(IUCLID)

## *Ratio COD/ThBOD*

95 %  
(IUCLID)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 1992
Proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S. ( CONT. ETHANOL, PHENOL)
Class	3 ( 6.1)
Packing group	III
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 1992
Proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S. ( CONT. ETHANOL, PHENOL)
Class	3 ( 6.1)
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

### Sea transport (IMDG)

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UN number	UN 1992
Proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S. ( CONT. ETHANOL, PHENOL)
Class	3 ( 6.1)
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

## SECTION 15. Regulatory information

### United States of America

#### OSHA Hazards

Combustible Liquid  
Carcinogen  
Target organ effects  
Highly toxic by inhalation  
Toxic by ingestion  
Toxic by skin absorption  
Corrosive to skin  
Mutagen

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### SARA 311/312 Hazards

Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

#### SARA 313

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

##### *Ingredients*

Phenol	108-95-2
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#### SARA 302

The following components are subject to reporting levels established by SARA Title III, Section 302:

##### *Ingredients*

Phenol	108-95-2
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### Clean Water Act

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

#### *Ingredients*

Phenol

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

#### *Ingredients*

Phenol

### DEA List I

Not listed

### DEA List II

Listed

#### *Ingredients*

ethyl methyl ketone

78-93-3

## US State Regulations

### Massachusetts Right To Know

#### *Ingredients*

ethanol

Phenol

### Pennsylvania Right To Know

#### *Ingredients*

water

ethanol

Phenol

New fuchsin

### New Jersey Right To Know

#### *Ingredients*

water

ethanol

Phenol

### California Prop 65 Components

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

#### *Ingredients*

ethanol

### Notification status

TSCA:

All components of the product are listed in the TSCA-inventory.

DSL:

All components of this product are on the Canadian DSL.

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## SECTION 16. Other information

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## Training advice

Provide adequate information, instruction and training for operators.

## Full text of H-Statements referred to under sections 2 and 3.

H226

Flammable liquid and vapor.

H314

Causes severe skin burns and eye damage.

H341

Suspected of causing genetic defects.

## Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

Revision Date 08/21/2013

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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