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

Revision Date 07/19/2019 Version 1.5

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

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation | 400 Summit Drive | Burlington | Massachusetts 01803 | United States of America | General Inquiries: +1 800-645-5476 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 3, H226
Skin corrosion, Category 1B, H314
Serious eye damage, Category 1, H318
Germ cell mutagenicity, Category 2, H341
Specific target organ systemic toxicity - repeated exposure, Category 2, Nervous system, Kidney, Liver, Skin, H373

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.
H373 May cause damage to organs (Nervous system, Kidney, Liver, Skin) through prolonged or repeated exposure.

Precautionary Statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
P321 Specific treatment (see supplemental first aid instructions on this label).
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

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
Exact percentages are being withheld as a trade secret.
Phenol (>= 1 % - < 5 %)
108-95-2
Exact percentages are being withheld as a trade secret.

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 contact with skin: rinse out with polyethylene glycol 400 or a mixture of polyethylene glycol 300/ethanol 2:1 and wash with plenty of water. If neither is available wash with plenty of water. Immediately take off contaminated clothing. Call a physician immediately.

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

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

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

Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. Fire-fighting measures

Extinguishing media
Suitable extinguishing media
Water, Foam, Carbon dioxide (CO2), 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.
Development of hazardous combustion gases or vapors possible in the event of fire.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.

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
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. 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 let product enter 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 carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

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

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

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Components

Basis	Value	Threshold limits	Remarks
ethanol 64-17-5			
ACGIH	Short Term Exposure Limit (STEL):	1,000 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	1,000 ppm 1,900 mg/m³	
OSHA_TRANS	PEL:	1,000 ppm 1,900 mg/m³	
Z1A	Time Weighted Average (TWA):	1,000 ppm 1,900 mg/m³	

Phenol 108-95-2

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/m³	Ceiling Limit Value 15-min
	Recommended exposure limit (REL):	5 ppm 19 mg/m³	
OSHA_TRANS	Skin designation:		Can be absorbed through the skin.
	PEL:	5 ppm 19 mg/m³	
Z1A	Time Weighted Average (TWA):	5 ppm 19 mg/m³	
	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.
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
full contact:

Glove material:	butyl-rubber
Glove thickness:	0.7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0.40 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 730 Camatril® -Velours (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:
Flame retardant antistatic protective clothing.

Respiratory protection
required when vapors/aerosols are generated.
Recommended Filter type: Filter A-(P3)
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer.
These measures have to be properly documented.

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.
Relative vapor density	No information available.
Density	0.99 g/cm3 at 68 °F (20 °C)
Relative density	No information available.
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.
Oxidizing properties	none

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

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

Acute oral toxicity
Acute toxicity estimate: > 2,000 mg/kg
Calculation method

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
Acute toxicity estimate: > 20 mg/l; 4 h ; vapor
Calculation method

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

Acute dermal toxicity
Acute toxicity estimate : > 2,000 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
May cause damage to organs through prolonged or repeated exposure.
Target Organs: Nervous system, Kidney, Liver, Skin

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	Group 1: Carcinogenic to humans
	New fuchsin 3248-91-7
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
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
Damage to:
Liver, Kidney, Cardiac
Other dangerous properties can not be excluded.
This substance should be handled with particular care.

Components

ethanol

Acute oral toxicity
LD50 Rat: 10,470 mg/kg
OECD Test Guideline 401

Acute inhalation toxicity
LC50 Rat: 124.7 mg/l; 4 h ; vapor
OECD Test Guideline 403

Skin irritation
Rabbit
Result: No skin irritation
OECD Test Guideline 404

Eye irritation
Rabbit
Result: Eye irritation
OECD Test Guideline 405

Sensitization
Local lymph node assay (LLNA) Mouse
Result: negative
Method: OECD Test Guideline 429

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test
MOUSE LYMPHOMA TEST
Result: negative
Method: OECD Test Guideline 476

Reproductive toxicity
Application Route: Oral
Mouse
Method: OECD Test Guideline 416

Phenol

Acute dermal toxicity
LD50 Rat: 660 mg/kg
OECD Test Guideline 402

Skin irritation
In vitro study
Result: Causes burns.
OECD Test Guideline 431

Eye irritation
Rabbit
Result: Corrosive
OECD Test Guideline 405

Sensitization
Sensitization test: Guinea pig
Result: negative
(IUCLID)

Germ cell mutagenicity
Genotoxicity in vitro
Mutagenicity (mammal cell test): chromosome aberration.
Result: positive
Method: OECD Test Guideline 473

Mutagenicity (mammal cell test): micronucleus.
Result: positive
Method: OECD Test Guideline 405

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.

Components

ethanol

Toxicity to fish
flow-through test EC50 Pimephales promelas (fathead minnow): 15,300 mg/l; 96 h
Analytical monitoring: yes
US-EPA

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 9,268 - 14,221 mg/l; 48 h (IUCLID)

Toxicity to algae
IC5 Scenedesmus quadricauda (Green algae): 5,000 mg/l; 7 d (Lit.)

Toxicity to bacteria
EC5 Pseudomonas putida: 6,500 mg/l; 16 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
semi-static test NOEC Daphnia magna (Water flea): 9.6 mg/l; 9 d
(ECHA)

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
90 %
(Lit.)

Partition coefficient: n-octanol/water
log Pow: -0.31
(experimental)
(Lit.) Bioaccumulation is not expected.

Substance does not meets 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
static test EC50 Ceriodaphnia dubia (water flea): 3.1 mg/l; 48 h
US-EPA

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

static test EC50 Pseudokirchneriella subcapitata (algae): 61.1 mg/l; 96 h
US-EPA

Toxicity to bacteria
EC50 activated sludge: 766 mg/l; 3 h
OECD Test Guideline 209

Toxicity to fish (Chronic toxicity)
semi-static test NOEC Poecilia reticulata (guppy): 4 mg/l; 14 d

OECD Test Guideline 204

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
semi-static test EC10 Daphnia magna (Water flea): 0.46 mg/l; 16 d
(ECHA)

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)

Partition coefficient: n-octanol/water
log Pow: 1.47 (30 °C)
(ECHA) Bioaccumulation is not expected.

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

Surface tension
71.3 mN/m
at 20 °C

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. (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. (ETHANOL, PHENOL)
Class	3 (6.1)
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1992
Proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S. (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

SARA 313

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

Components

Phenol	108-95-2	*4.058 %*

SARA 302

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

Components

Phenol	108-95-2

Clean Water Act

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

Components

Phenol

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

Components

Phenol

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Components

Phenol

DEA List I

Not listed

DEA List II

Listed

Components

ethyl methyl ketone	78-93-3

US State Regulations

Massachusetts Right To Know

Components

ethanol

Phenol

Pennsylvania Right To Know

Components

ethanol

Phenol

New fuchsin

New Jersey Right To Know

Components

ethanol

Phenol

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause

cancer, birth, or any other reproductive defects.

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

SECTION 16. Other information

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.
H318	Causes serious eye damage.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.

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.

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