SAFETY DATA SHEET

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

Revision Date 06/11/2014 Version 1. 1

SECTION 1. Identification

Product identifier

Product number	R03465
Product name	Lactophenol, Cotton Blue

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

Identified uses	Reagent for analysis

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

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

Acute toxicity, Category 4, Oral, H302
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
Skin corrosion, Category 1B, H314
Germ cell mutagenicity, Category 2, H341
Specific target organ systemic toxicity - repeated exposure, Category 2, 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
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.
H341 Suspected of causing genetic defects.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P314 Get medical advice/ attention if you feel unwell.
P308 + P310 IF exposed or concerned: 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). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Chemical nature: Mixture of inorganic and organic compounds

Hazardous ingredients

Chemical Name (Concentration)
CAS-No.
glycerine (>= 30 % - < 50 %)
56-81-5
Exact percentages are being withheld as a trade secret.
Phenol (>= 10 % - < 30 %)
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. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately 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
Irritation and corrosion, Cough, Shortness of breath, respiratory arrest, Drowsiness, Dizziness, Unconsciousness, inebriation, cardiovascular disorders, collapse, Headache, confusion, Vomiting, gastric pain, Diarrhea, death
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.

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
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: Avoid substance contact. Ensure adequate ventilation. 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.

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).

SECTION 7. Handling and storage

Precautions for safe handling

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

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

No declaration

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
glycerine 56-81-5			
OSHA_TRANS	PEL:	15 mg/m³	Form of exposure: Total dust.
	PEL:	5 mg/m³	Form of exposure: Respirable fraction.
Z1A	Time Weighted Average (TWA):	10 mg/m³	Form of exposure: Total dust.
	Time Weighted Average (TWA):	5 mg/m³	Form of exposure: Respirable fraction.
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

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:

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.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	blue
Odor	No strong odor known.
Odor Threshold	No information available.
pH	No information available.
Melting point	No information available.
Boiling point	No information available.
Flash point	No information available.
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	No information available.
Relative density	No information available.
Water solubility	No information available.
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
See below

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

Possibility of hazardous reactions
Exothermic reaction with:

Aluminum, Aldehydes, halogens, hydrogen peroxide, iron(III) compounds, Oxidizing agents, Strong acids, Strong bases, formaldehyde, Oxides of phosphorus

Risk of explosion with:

halogens, Strong oxidizing agents, peroxi compounds, hydrogen peroxide, perchlorates, Nitriles, nitrites, nitrates, salts of oxyhalogenic acids

Nitric acid, with, conc. sulfuric acid

Risk of ignition or formation of inflammable gases or vapors with:

potassium permanganate, halogen oxides, hydrides, chromium(VI) oxide

Conditions to avoid
no information available

Incompatible materials
rubber, various plastics, various alloys, various metals

Hazardous decomposition products
no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Eye contact, Skin contact

Target Organs
Heart
Eyes
Skin
Respiratory system
Kidneys
Liver
Kidney
Lungs
Bladder
Gastro-intestinal system
Cardio-vascular system
Central nervous system
head
spleen
Respiratory organs
Pancreas

Acute oral toxicity
Acute toxicity estimate: 400 mg/kg
Calculation method

absorption
Symptoms: Vomiting, gastric pain, Diarrhea, 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: 12 mg/l; 4 h
Calculation method

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

Acute dermal toxicity
Acute toxicity estimate : 1,200 mg/kg
Calculation method

absorption

Skin irritation
Mixture causes burns.

Eye irritation
Mixture causes serious eye damage. Risk of blindness!

CMR effects
Mutagenicity:
Evidence of 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
Mixture may cause damage to organs through prolonged or repeated exposure.

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

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.
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, Cyanosis, 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.

Ingredients

glycerine

Acute oral toxicity
LD50 rat: 12,600 mg/kg (IUCLID)

Acute dermal toxicity
LD50 rabbit: > 18,700 mg/kg (IUCLID)

Skin irritation
rabbit
Result: No irritation
(IUCLID)

Eye irritation
rabbit
Result: No eye irritation
OECD Test Guideline 405

Sensitization
Patch test: human
Result: negative
(IUCLID)

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

Phenol

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)

LC0 rat: 0.9 mg/l; 8 h ; aerosol
OECD Test Guideline 403

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

Skin irritation
rabbit
Result: Causes burns.
(IUCLID)

Eye irritation
rabbit
Result: Corrosive
OECD Test Guideline 405

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

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Salmonella typhimurium
Result: negative
(National Toxicology Program)

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.

Ingredients

glycerine

Toxicity to fish
LC50 Carassius auratus (goldfish): > 5,000 mg/l; 24 h (Lit.)

Toxicity to daphnia and other aquatic invertebrates
EC5 E.sulcatum: 3,200 mg/l; 72 h (Lit.)

EC50 Daphnia magna (Water flea): > 10,000 mg/l; 24 h (IUCLID)

Toxicity to algae
IC5 Scenedesmus quadricauda (Green algae): > 10,000 mg/l; 7 d (Lit.)

Toxicity to bacteria
EC5 Pseudomonas putida: > 10,000 mg/l; 16 h (Lit.)

Biodegradability
63 %; 14 d
OECD Test Guideline 301C
Readily biodegradable.

Biochemical Oxygen Demand (BOD)
870 mg/g (5 d)
(External MSDS)

Chemical Oxygen Demand (COD)
1,160 mg/g
(External MSDS)

Theoretical oxygen demand (ThOD)
1,217 mg/g
(Lit.)

Ratio BOD/ThBOD
BOD5 71 %
(Lit.)

Ratio COD/ThBOD
95 %
(Lit.)

Phenol

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

semi-static test NOEC Poecilia retiaculata (guppy): 4 mg/l; 14 d
OECD Test Guideline 204

Toxicity to daphnia and other aquatic invertebrates
EC5 E.sulcatum: 33 mg/l; 72 h (IUCLID) (maximum permissible toxic concentration)

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 (Selenastrum capricornutum): 61.1 mg/l; 96 h
US-EPA

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

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.

62 %; 100 h; aerobic
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)

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 2810
Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL)
Class	6.1
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 2810
Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL)
Class	6.1
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 2810
Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL)
Class	6.1
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-A S-A

SECTION 15. Regulatory information

United States of America

OSHA Hazards

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

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	*20 %*

SARA 302

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

Ingredients
Phenol 108-95-2

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

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients
glycerine
Phenol

Pennsylvania Right To Know

Ingredients
glycerine
Phenol
water
Lactic acid

New Jersey Right To Know

Ingredients
glycerine
Phenol
water
Lactic acid

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.

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
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.

Revision Date 06/11/2014

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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