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Material Safety Data Sheet

Methylene Blue Solution, Loeffler MSDS

Section 1: Chemical Product and Company Identification

Product Name: Methylene Blue Solution, Loeffler

Catalog Codes: SLM3328

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Potassium hydroxide; Ethyl alcohol 200 Proof; Water

CI#: Not applicable.

Synonym: Methylene Blue-Loeffler's Alkaline

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

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14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Potassium hydroxide	1310-58-3	<1
Ethyl alcohol 200 Proof	64-17-5	25-30
Water	7732-18-5	70-75
Methylene Blue CI52015	7220-79-3	<1

Toxicological Data on Ingredients: Ethyl alcohol 200 Proof: ORAL (LD50): Acute: 7060 mg/kg [Rat.]. 3450 mg/kg [Mouse]. VAPOR (LC50): Acute: 20000 ppm 8 hours [Rat]. 39000 mg/m 4 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Classified PROVEN by State of California Proposition 65 [Ethyl alcohol 200 Proof]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethyl alcohol 200 Proof]. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. [Potassium hydroxide]. Mutagenic for mammalian somatic cells. [Ethyl alcohol 200 Proof]. Mutagenic for bacteria and/or yeast. [Ethyl alcohol 200 Proof]. Mutagenic for mammalian somatic cells. [Methylene Blue CI52015]. Mutagenic for bacteria and/or yeast. [Methylene Blue CI52015]. **TERATOGENIC EFFECTS:** Classified PROVEN for

human [Ethyl alcohol 200 Proof]. DEVELOPMENTAL TOXICITY: Classified Development toxin [PROVEN] [Ethyl alcohol 200 Proof]. Classified Reproductive system/toxin/male [POSSIBLE] [Ethyl alcohol 200 Proof]. The substance is toxic to blood, the reproductive system, liver, upper respiratory tract, skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact:

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. Seek medical attention.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: The lowest known value is 363°C (685.4°F) (Ethyl alcohol 200 Proof).

Flash Points:

The lowest known value is CLOSED CUP: 12.78°C (55°F). OPEN CUP: 12.78°C (55°F). (Cleveland). (Ethyl alcohol 200 Proof)

Flammable Limits: The greatest known range is LOWER: 3.3% UPPER: 19% (Ethyl alcohol 200 Proof)

Products of Combustion:

These products are carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂...), sulfur oxides (SO₂, SO₃...), halogenated compounds. Some metallic oxides.

Fire Hazards in Presence of Various Substances:

Flammable in presence of open flames and sparks, of heat. Slightly flammable to flammable in presence of oxidizing materials. Non-flammable in presence of shocks, of reducing materials, of combustible materials, of organic materials, of alkalis.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of acids. Non-explosive in presence of shocks.

Fire Fighting Media and Instructions:

Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:

Containers should be grounded. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME Vapor may travel considerable distance to source of ignition and flash back. (Ethyl alcohol 200 Proof)

Special Remarks on Explosion Hazards:

Ethanol has an explosive reaction with the oxidized coating around potassium metal. Ethanol ignites and then explodes on contact with acetic anhydride + sodium hydrosulfate (ignites and may explode), disulfuric acid + nitric acid, phosphorous(III) oxide platinum, potassium-tert-butoxide+ acids. Ethanol forms explosive products in reaction with the following compound : ammonia + silver nitrate (forms silver nitride and silver fulminate), iodine + phosphorus (forms ethane iodide), magnesium perchlorate (forms ethyl perchlorate), mercuric nitrate, nitric acid + silver (forms silver fulminate) silver nitrate (forms ethyl nitrate) silver(I) oxide + ammonia or hydrazine (forms silver nitride and silver fulminate), sodium (evolves hydrogen gas). (Ethyl alcohol 200 Proof)

Section 6: Accidental Release Measures**Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:

Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage**Precautions:**

Keep locked up.. Keep container dry. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids.

Storage:

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection**Engineering Controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:

Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

Potassium hydroxide CEIL: 2 from ACGIH (TLV) [United States] [1999] Ethyl alcohol 200 Proof TWA: 1000 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 1000 (ppm) from OSHA (PEL) [United States] TWA: 1900 (mg/m3) from OSHA (PEL) [United States] TWA: 1000 (ppm) from NIOSH TWA: 1000 (ppm) [United Kingdom (UK)] TWA: 1920 (mg/m3) [United Kingdom (UK)] TWA: 1000 STEL: 1250 (ppm) [Canada] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: Not applicable.

Color: Clear Blue. (Dark.)

pH (1% soln/water): Neutral.

Boiling Point: The lowest known value is 78.5°C (173.3°F) (Ethyl alcohol 200 Proof). Weighted average: 94.09°C (201.4°F)

Melting Point: May start to solidify at -114.1°C (-173.4°F) based on data for: Ethyl alcohol 200 Proof.

Critical Temperature: The lowest known value is 243°C (469.4°F) (Ethyl alcohol 200 Proof).

Specific Gravity: Weighted average: 0.93 (Water = 1)

Vapor Pressure: The highest known value is 5.7 kPa (@ 20°C) (Ethyl alcohol 200 Proof). Weighted average: 3.23 kPa (@ 20°C)

Vapor Density: The highest known value is 1.59 (Air = 1) (Ethyl alcohol 200 Proof). Weighted average: 0.89 (Air = 1)

Volatility: Not available.

Odor Threshold: The highest known value is 100 ppm (Ethyl alcohol 200 Proof)

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether, acetone.

Solubility:

Easily soluble in cold water, hot water. Soluble in methanol, diethyl ether, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, ignition sources, incompatible materials

Incompatibility with various substances:

Reactive with acids. Slightly reactive to reactive with oxidizing agents, alkalis.

Corrosivity: Not available

Special Remarks on Reactivity:

Ethanol rapidly absorbs moisture from the air. Can react vigorously with oxidizers. The following oxidants have been demonstrated to undergo vigorous/explosive reaction with ethanol: barium perchlorate, bromine pentafluoride, calcium hypochlorite, chloryl perchlorate, chromium trioxide, chromyl chloride, dioxygen difluoride, disulfuryl difluoride, fluorine nitrate, hydrogen peroxide, iodine heptafluoride, nitric acid nitrosyl perchlorate, perchloric acid permanganic acid, peroxodisulfuric acid, potassium dioxide, potassium perchlorate, potassium permanganate, ruthenium(VIII) oxide, silver perchlorate, silver peroxide, uranium hexafluoride, uranyl perchlorate. Ethanol reacts violently/expodes with the following compounds: acetyl bromide (evolves hydrogen bromide) acetyl chloride, aluminum, sesquibromide ethylate, ammonium hydroxide & silver oxide, chlorate, chromic anhydride, cyanuric acid + water, dichloromethane + sulfuric acid + nitrate (or) nitrite, hydrogen peroxide + sulfuric acid, iodine + methanol + mercuric oxide, manganese perchlorate + 2,2-dimethoxy propane, perchlorates, permanganates + sulfuric acid, potassium superoxide, potassium tert-butoxide, silver & nitric acid, silver perchlorate, sodium hydrazide, sulfuric acid + sodium dichromate, tetrachlorosilane + water. Ethanol is also incompatible with platinum, and sodium. (Ethyl alcohol 200 Proof)

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 3450 mg/kg [Mouse]. (Ethyl alcohol 200 Proof).

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified PROVEN by State of California Proposition 65 [Ethyl alcohol 200 Proof]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethyl alcohol 200 Proof]. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. [Potassium hydroxide]. Mutagenic for mammalian somatic cells. [Ethyl alcohol 200 Proof]. Mutagenic for bacteria and/or yeast. [Ethyl alcohol 200 Proof]. Mutagenic for mammalian somatic cells. [Methylene Blue CI52015]. Mutagenic for bacteria and/or yeast. [Methylene Blue CI52015]. **TERATOGENIC EFFECTS:** Classified PROVEN for human [Ethyl alcohol 200 Proof]. **DEVELOPMENTAL TOXICITY:** Classified Development toxin [PROVEN] [Ethyl alcohol 200 Proof]. Classified Reproductive system/toxin/male [POSSIBLE] [Ethyl alcohol 200 Proof].

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

May affect genetic material (mutagenic) Causes adverse reproductive effects and birth defects (teratogenic) , based on moderate to heavy consumption. May cause cancer based on animal data. Human: passes through the placenta, excreted in maternal milk. (Ethyl alcohol 200 Proof)

Special Remarks on other Toxic Effects on Humans:

Acute potential health effects: Skin: causes skin irritation Eyes: causes eye irritation Ingestion: May affect behavior. Moderately toxic and narcotic in high concentrations. May affect metabolism, gastrointestinal tract, blood, liver. May affect respiratory tract, cardiovascular and urinary systems. Experimentally tumorigen. Inhalation: May cause irritation of the respiratory tract, headache, drowsiness, nausea, narcosis. (Ethyl alcohol 200 Proof)

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Alcohols, n.o.s. (Ethanol 25-30%) (Ethyl alcohol 200 Proof) UNNA: 1987 PG: III

Special Provisions for Transport: No DOT, ref 49CFR, 173.150

Section 15: Other Regulatory Information

Federal and State Regulations:

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Ethyl alcohol 200 Proof
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Ethyl alcohol 200 Proof
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Ethyl alcohol 200 Proof
New York release reporting list: Potassium hydroxide
Rhode Island RTK hazardous substances: Ethyl alcohol 200 Proof
Pennsylvania RTK: Potassium hydroxide; Ethyl alcohol 200 Proof
Florida: Potassium hydroxide; Ethyl alcohol 200 Proof
Minnesota: Potassium hydroxide
Massachusetts RTK: Potassium hydroxide; Ethyl alcohol 200 Proof
New Jersey: Potassium hydroxide; Ethyl alcohol 200 Proof
TSCA 8(b) inventory: Potassium hydroxide; Ethyl alcohol 200 Proof; Water
CERCLA: Hazardous substances.: Potassium hydroxide: 1000 lbs. (453.6 kg);

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

R11- Highly flammable. S2- Keep out of the reach of children.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 10:43 AM

Last Updated: 11/01/2010 12:00 PM

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