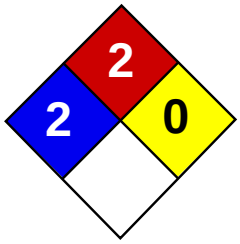

Health	1
Fire	2
Reactivity	0
Personal Protection	G

Material Safety Data Sheet
Ninhydrin Solution MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ninhydrin Solution

Catalog Codes: SLN2455

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Dimethyl sulfoxide; Ninhydrin

CI#: Not applicable.

Synonym: Ninhydrin Reagent Solution

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

Sciencelab.com, Inc.
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
Lithium acetate, dihydrate	6108-17-4	12
Dimethyl sulfoxide	67-68-5	75
Ninhydrin	485-47-2	2
Hydrindantin		0.29

Toxicological Data on Ingredients: Dimethyl sulfoxide: ORAL (LD50): Acute: 14500 mg/kg [Rat]. 7920 mg/kg [Mouse]. Ninhydrin LD50: Not available. LC50: Not available. Hydrindantin LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

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

Potential Chronic Health Effects:
Hazardous in case of skin contact (permeator), of ingestion. Slightly hazardous in case of skin contact (irritant, sensitizer). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Dimethyl sulfoxide]. Mutagenic for bacteria and/or yeast. [Dimethyl sulfoxide]. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to the nervous system. The substance may be toxic to

blood, kidneys, liver, mucous membranes, skin, central nervous system (CNS), thyroid. 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.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

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: Combustible.

Auto-Ignition Temperature: The lowest known value is 215°C (419°F) (Dimethyl sulfoxide).

Flash Points: The lowest known value is CLOSED CUP: 89°C (192.2°F). OPEN CUP: 95°C (203°F). (Dimethyl sulfoxide)

Flammable Limits: The greatest known range is LOWER: 2.6% UPPER: 28.5% (Dimethyl sulfoxide)

Products of Combustion: These products are carbon oxides (CO, CO2), sulfur oxides (SO2, SO3...). Some metallic oxides.

Fire Hazards in Presence of Various Substances:
Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances: Non-explosive in presence of open flames and sparks, of shocks, of heat.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
When heated above its boiling point, dimethyl sulfoxide degrades giving off formaldehyde, methyl mercaptan, and sulfur dioxide (Dimethyl sulfoxide)

Special Remarks on Explosion Hazards: Not Applicable

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. If necessary: Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Neutralize the residue with a dilute solution of sodium carbonate. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep locked up.. 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. Avoid contact with skin. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis.

Storage:
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). Do not store above 8°C (46.4°F). Refrigerate

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:
Safety glasses. 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: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: Not applicable.

Color: Not available.

pH (1% soln/water): Not availble

Boiling Point: The lowest known value is 189°C (372.2°F) (Dimethyl sulfoxide).

Melting Point: May start to solidify at 18.45°C (65.2°F) based on data for: Dimethyl sulfoxide.

Critical Temperature: Not available.

Specific Gravity: Weighted average: 1.09 (Water = 1)

Vapor Pressure: The highest known value is 0.1 kPa (@ 20°C) (Dimethyl sulfoxide).

Vapor Density: The highest known value is 2.71 (Air = 1) (Dimethyl sulfoxide).

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

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

Solubility: Soluble in cold water, hot water, diethyl ether, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Hygroscopic. It has a strong water affinity, and if left exposed it will become rapidly diluted. Incompatible with strong oxidants, arylhalides, bromobenzoyl acetanilide, magnesium perchlorate, perchloric acid, and sodium hydroxide, alkali metals, hydrobromic acid, acidic solutions of alkali bromides, organic and inorganic acid chlorides, acid halides, cyanuric chloride, silver fluoride, methyl bromide, sodium hydride, periodic acid, diborane, iodine pentafluoride, silicon tetrachloride, phosphorous halides (phosphorous trichloride), trichloroacetic acid + copper wool, phosphorous trioxide, thionyl chloride, plastics (Dimethyl sulfoxide)

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

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

Toxicity to Animals: Acute oral toxicity (LD50): 7920 mg/kg [Mouse]. (Dimethyl sulfoxide).

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Dimethyl sulfoxide]. Mutagenic for bacteria and/or yeast. [Dimethyl sulfoxide]. Contains material which may cause damage to the following organs: blood, kidneys, liver, mucous membranes, skin, central nervous system (CNS), thyroid.

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

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose for Lithium Acetate, anhydrous (CAS no. 546-89-4): LDL [mouse] - Route: oral; Dose 1500 mg/kg (Lithium acetate, dihydrate). Lowest Published Lethal Dose: LDL[Rat] - Route: Oral; Dose: 250 mg/kg (Ninhydrin)

Special Remarks on Chronic Effects on Humans:
May cause adverse reproductive effects (female fertility and fetotoxicity - post implantation mortality) and birth defects based on animal data. May cause cancer (tumorigenic) based on animal data. (Dimethyl sulfoxide)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Causes skin irritation. Readily absorbed through skin. Garlic taste and odor may develop on breath and skin. Absorption through skin may also affect respiration(dyspnea), blood, behavior (fatigue, dizziness, sedation,

headaches), vision (transient disturbances of color vision, photophobia), urinary system (hematuria). Eyes: Causes eye irritation. May cause blurred vision, corneal opacity, chemical conjunctivitis. Inhalation: Causes respiratory tract irritation. Symptoms from exposure to high vapor concentrations may include coughing, shortness of breath, headache, dizziness and sedation. Ingestion: Causes gastrointestinal tract irritation. May affect behavior/central nervous system, respiration (dyspnea). Symptoms may include nausea, vomiting, and diarrhea. May cause abdominal pain, drowsiness, confusion, lethargy, agitation, disorientation, tremor, muscle weakness, chills, chest pains. May also affect liver (elevated liver enzymes, jaundice), cardiovascular system, and urinary system (hematuria, hemoglobinuria, renal tubular injury).) Chronic Potential Health Effects: Skin: Chronic absorption may cause effects similar to that of acute skin absorption. Chronic skin contact may cause scaling dermatitis. Ingestion: repeated oral doses may affect the kidneys (hematuria), blood (normocytic anemia, changes in red blood cell count), and metabolism (anorexia), liver. (Dimethyl sulfoxide)

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 less 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: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: Dimethyl sulfoxide; Ninhydrin

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

Other Classifications:

WHMIS (Canada):
CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

DSCL (EEC):
R20- Harmful by inhalation. R36/38- Irritating to eyes and skin. S7/9- Keep container tightly closed and in a well-ventilated place. S23- Do not breathe gas/fumes/vapour/spray S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 0

Personal Protection: g

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

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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