

MATERIAL SAFETY DATA SHEET

LUGOL'S IODINE

(Working Solution)

1-CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Lugol's iodine Product

Code: 40129

CAS#: Mixture.

Synonym: Lugol's Solution.

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Company Identification: International Biomedical Supplies Inc.

2-267 Richmond Road, Ottawa ON K1Z 6X3, Canada,

E-Mail: info@ibsbiomedical.com,

2-COMPOSITION & INFORMATION ON INGREDIENTS

Composition:

Name	CAS #	% by Weight (before dilution)
Iodine	7553-56-2	5
Potassium Iodide	7681-11-0	10
Water	7732-18-5	85

Toxicological Data on Ingredients: Iodine: ORAL (LD50): Acute: 14000 mg/kg [Rat]. 22000 mg/kg [Mouse].
Potassium Iodide LD50: Not available. LC50: Not available.

3-HAZARDS IDENTIFICATION

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

Potential Chronic Health Effects: Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant). **CARCINOGENIC EFFECTS:** Not available. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. [Potassium Iodide]. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/ female, Development toxin [POSSIBLE] [Potassium Iodide]. The substance is toxic to thyroid. The substance may be toxic to blood, kidneys, liver, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage. Hazardous in case of ingestion. Slightly hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant). **CARCINOGENIC EFFECTS:** Not available. **MUTAGENIC EFFECTS:** Mutagenic for mammalian somatic cells. [Potassium Iodide]. **TERATOGENIC EFFECTS:** Not available. **DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/ female, Development toxin [POSSIBLE] [Potassium Iodide]. The substance is toxic to thyroid. The substance may be toxic to blood, kidneys, liver, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

4- FIRST AID MEASURES

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

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,

MATERIAL SAFETY DATA SHEET

LUGOL'S IODINE

(Working Solution)

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.

5-FIRE AND EXPLOSION DATA

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

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

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Potassium iodide + Fluorine Perchlorate will explode on contact.

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. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7-HANDLING AND STORAGE

Precautions: Keep locked up. Keep container dry. 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 locked up.. Keep container dry. 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.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

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.

Personal Protection: F Splash goggles. Lab coat. Gloves. Splash goggles. Lab coat. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist before handling this product. Exposure Limits:

Iodine STEL: 1 (mg/m3) from ACGIH (TLV) [United States] STEL: 0.1 (ppm) from ACGIH (TLV)

MATERIAL SAFETY DATA SHEET

LUGOL'S IODINE

(Working Solution)

[United States] TWA: 1 CEIL 1 (mg/m³) from OSHA (PEL) [United States] TWA: 0.1 CEIL: 0.1 (ppm) from OSHA (PEL) [United States] STEL: 0.1 (ppm) [United Kingdom (UK)] STEL: 1.1 (mg/m³) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

9-PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Liquid.

Odor: Sharp Characteristic.

Taste: Not available.

Molecular Weight: Not available.

Color: Red. Brown. (Dark.)

PH (1% soln/water): Neutral.

Boiling Point: 100°C (212°F)

Melting Point: 0°C (32°F)

Critical Temperature: Not available.

Specific Gravity: 1.05 (Water = 1)

Vapor Pressure: The highest known value is 2.3 kPa (@ 20°C) (Water).

Vapor Density: 1 (Air =1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff: Not available.

Ionicity (in Water): Not available.

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

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

10-STABILITY AND REACTIVITY DATA

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Slightly reactive to reactive with oxidizing agents, reducing agents, Organic materials, metals, acids.

Corrosivity: Not available.

Special Remarks on Reactivity: Moisture Sensitive. Light Sensitive. Air Sensitive. Air causes decomposition to iodine. Reacts violently with strong oxidizers, bromotrifluorides, chlorotrifluorides, fluorine perchlorate, metallic salts. Attacks metals in moist environments. Also incompatible with salts of alkaloids, chloral hydrate, calomel (mercurous chloride), potassium chlorate, tartaric and other acids, oxidants, diazonium salts, charcoal, ozone, strong reducers, alkali metals, metals (brass, aluminum magnesium, zinc, cadmium, copper, tin, nickel, steel), metallic salts, organic materials, light. (Potassium Iodide). Incompatible with liquid chlorine, acetaldehyde, ammonia, salt + ethanol, ammonium hydroxide, methyl alcohol, antimony, silver azide, lithium, potassium, sodium, phosphorous, bromine pentafluoride, fluorine, oxygen difluoride, magnesium, finely divided metals, organic solvents, rubber goods, plastics, zinc, aluminum, alkali metals, sulphur, ammonia solutions, Bromine trifluoride, reducing agents, iron, ethanol + butadiene; ethanol + phosphorous; ethanol + methanol + HgO; foramide + pyridine + sulfur trioxide; formamide; halogens or interhalogens; mercuric oxide; metal carbides; oxygen; pyridine; sodium hydride. Violent reaction with iodine and aluminum + diethyl ether

MATERIAL SAFETY DATA SHEET

LUGOL'S IODINE

(Working Solution)

... (and) titanium (above 113 deg C) (Iodine)

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

11-TOXICOLOGICAL INFORMATION

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

Toxicity to Animals: Acute oral toxicity (LD50): 14000 mg/kg [Rat]. (Iodine).

Chronic Effects on Humans: Mutagenic Effects: Mutagenic for mammalian somatic cells. [Potassium Iodide]. Developmental Toxicity: Classified Reproductive system/toxin/female, Development toxin [Possible] [Potassium Iodide]. Contains material which may cause damage to the following organs: blood, kidneys, liver, skin, eyes.

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

Special Remarks on Toxicity to Animals: Lowest Published Lethal Dose: LDL [Human] - Route: Oral; Dose: 28mg/kg LCL [Rat] - Route: Inhalation; Dose: 137 ppm/1H (Iodine)

Special Remarks on Chronic Effects on Humans: Can cause adverse reproductive effects and birth defects based on animal data. May affect genetic material based on animal data (Potassium Iodide)

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Causes skin irritation. It can cause brown stains on the skin. It can be absorbed through the skin. Eyes: Eye contact with liquid causes irritation. Iodine vapors may cause eye irritation. Eye contact with an excessive amount of iodine vapor may also cause blepharitis. Inhalation: Low hazard during normal industrial handling. Excessive inhalation of iodine vapors may cause respiratory tract, nasal, and mucous membrane irritation. Symptoms may include coughing, tightness in the chest, rhinitis, dyspnea/respiratory distress, coughing, sneezing, pulmonary edema, chemical pneumonitis, edema of the larynx and bronchi, pharyngitis, swelling of the parotid gland, and cachexia. High exposure may lead to lung disease and may also affect behavior/central nervous system (delirium, hallucination, depression, seizure).

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.

13-DISPOSAL CONSIDERATION

Waste Disposal Methods: Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

14-TRANSPORTATION INFORMATION

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

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

MATERIAL SAFETY DATA SHEET

LUGOL'S IODINE

(Working Solution)

15-OTHER REGULATORY INFORMATION

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

Other Classifications:

DSCL (EEC): R36/38- Irritating to eyes and skin. R40- Possible risks of irreversible effects. R62- Possible risk of impaired fertility. R63- Possible risk of harm to the unborn child. S2- Keep out of the reach of children. S36/37- Wear suitable protective clothing and gloves. S46- If swallowed, seek medical advice immediately and show this container or label.

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

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment: Gloves. Lab coat. Not applicable. Splash goggles.

16-OTHER INFORMATION

References: Not available.

Other Special Considerations: Not available.

Rev. Date: August 15th 2024

Revision: 4.2

Last Updated: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall **International Biomedical Supplies INC** be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if has been advised of the possibility of such damages.