

# Safety Data Sheet

## Lugol's Solution

**CAROLINA**<sup>®</sup>  
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### Section 1

### Product Description

**Product Name:** Lugol's Solution  
**Recommended Use:** Science education applications  
**Synonyms:** Donaldson's Amoeba Stain 2, Strong Iodine Solution  
**Distributor:** Carolina Biological Supply Company, 2700 York Road, Burlington, NC 27215-3398  
**Chemical Information:** 800-227-1150 (8am-5pm (ET) M-F)  
**Chemtrec:** 800-424-9300 (Transportation Spill Response 24 hours)

### Section 2

### Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

## WARNING



May cause an allergic skin reaction. Causes serious eye irritation. Toxic to aquatic life.

#### GHS Classification:

Skin Sensitisation Category 1, Serious Eye Damage/Eye Irritation Category 2, Hazardous to the aquatic environment - Acute Category 2

**Acute Toxicity Inhalation Vapor Contains** 15 % of the mixture consists of ingredient(s) of unknown toxicity  
**Acute Toxicity Inhalation Dust/Mist Contains** 15 % of the mixture consists of ingredient(s) of unknown toxicity

### Section 3

### Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
Water	7732-18-5	85
Potassium Iodide	7681-11-0	10
Iodine	7553-56-2	5

### Section 4

### First Aid Measures

#### Emergency and First Aid Procedures

**Inhalation:** In case of accident by inhalation: remove casualty to fresh air and keep at rest.  
**Eyes:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
**Skin Contact:** IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.  
**Ingestion:** If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

### Section 5

### Firefighting Procedures

**Extinguishing Media:** Use dry chemical, CO2 or appropriate foam.  
**Fire Fighting Methods and Protection:** Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.  
**Fire and/or Explosion Hazards:** Fire or excessive heat may produce hazardous decomposition products.  
**Hazardous Combustion Products:** Iodine and Iodine Compounds

### Section 6

### Spill or Leak Procedures

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## Steps to Take in Case Material Is Released or Spilled:

Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

## Section 7

## Handling and Storage

**Handling:** Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Avoid direct sunlight and heat.

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

**Storage Code:** Green - general chemical storage

## Section 8

## Protection Information

Chemical Name	ACGIH		OSHA PEL	
	(TWA)	(STEL)	(TWA)	(STEL)
Potassium Iodide	0.01 ppm TWA (inhalable fraction and vapor)	N/A	N/A	N/A
Iodine	0.01 ppm TWA (inhalable fraction and vapor)	0.1 ppm STEL (aerosol and vapor)	N/A	N/A

### Control Parameters

**Engineering Measures:** Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

**Personal Protective Equipment (PPE):** Lab coat, apron, eye wash, safety shower.

**Respiratory Protection:** No respiratory protection required under normal conditions of use.

**Respirator Type(s):** NIOSH approved air purifying respirator with dust/mist filter. None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.

**Eye Protection:** Wear chemical splash goggles when handling this product. Have an eye wash station available.

**Skin Protection:** Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

**Gloves:** Butyl rubber, Neoprene, Polyvinyl chloride, Nitrile

## Section 9

## Physical Data

**Formula:** See Section 3

**Molecular Weight:** No data available

**Appearance:** Purple-Yellow Liquid

**Odor:** Moderate Characteristic

**Odor Threshold:** No data available

**pH:** No data available

**Melting Point:** No data available

**Boiling Point:** No data available

**Flash Point:** No data available

**Flammable Limits in Air:** No data available

**Vapor Pressure:** No data available

**Evaporation Rate (BuAc=1):** No data available

**Vapor Density (Air=1):** No data available

**Specific Gravity:** Approx. 1.0

**Solubility in Water:** Soluble

**Log Pow (calculated):** No data available

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Viscosity:** No data available

**Percent Volatile by Volume:** No data available

## Section 10

## Reactivity Data

**Reactivity:** Not generally reactive under normal conditions.

**Chemical Stability:** Stable under normal conditions.

**Conditions to Avoid:** Elevated temperatures

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**Incompatible Materials:** Water-reactive materials, Strong oxidizing agents, Peroxides, Metals (ferrous), Acetaldehydes, Rust, Strong reducing agents, Magnesium, Sulfur, Rubber, Plastics, Halogens

**Hazardous Decomposition Products:** Iodine and Iodine Compounds

**Hazardous Polymerization:** Will not occur

## Section 11 Toxicity Data

**Routes of Entry:** Inhalation, ingestion, eye or skin contact.

**Symptoms (Acute):** Iodism, Hyperthyroidism, Hypothyroidism, Allergies, Impaired Kidney Function, Cardiovascular system, Central Nervous System Disorders, Pulmonary Edema, Headache

**Delayed Effects:** No data available

Acute Toxicity:	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
<b>Chemical Name</b> Water	7732-18-5	Oral LD50 Rat 90 g/kg		
Potassium Iodide	7681-11-0			
Iodine	7553-56-2	Oral LD50 Rat 14 g/kg		

Carcinogenicity:	CAS Number	IARC	NTP	OSHA
<b>Chemical Name</b> Potassium Iodide	7681-11-0	Not listed	Not listed	Not listed
Iodine	7553-56-2	Not listed	Not listed	Not listed

**Chronic Effects:**

**Mutagenicity:** No evidence of a mutagenic effect.

**Teratogenicity:** No evidence of a teratogenic effect (birth defect).

**Sensitization:** Evidence of a sensitization effect.

**Reproductive:** No evidence of negative reproductive effects.

**Target Organ Effects:**

**Acute:** Thyroid

**Chronic:** Thyroid

## Section 12 Ecological Data

**Overview:** Slight ecological hazard. In high concentrations, this product may be dangerous to plants and/or wildlife.

**Mobility:** No data

**Persistence:** Dissolved into water, Adsorbs to sediment, evaporates into atmosphere.

**Bioaccumulation:** No data

**Degradability:** No data

**Other Adverse Effects:** No data  
Combines with organics, forming new compounds.

Chemical Name	CAS Number	Eco Toxicity
Water	7732-18-5	No data available
Potassium Iodide	7681-11-0	
Iodine	7553-56-2	No data available

## Section 13 Disposal Information

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

**Waste Disposal Code(s):** Not Determined

## Section 14 Transport Information

**Ground - DOT Proper Shipping Name:** Not regulated for transport by US DOT.

**Air - IATA Proper Shipping Name:** Not regulated for air transport by IATA.

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## Section 15

## Regulatory Information

**TSCA Status:**

All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
Potassium Iodide	7681-11-0	No	No	No	No	No
Iodine	7553-56-2	No	No	No	No	No

## Section 16

## Additional Information

**Revised: 06/03/2013****Replaces: None****Printed: 06-21-2013**

The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

**Glossary**

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health