

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: IODINE-POTASSIUM IODIDE SOLUTION, 2%

Synonyms: Dilute Lugol's Solution / Lugol's Reagent

1.2. Intended Use of the Product

Use of the Substance/Mixture: For laboratory use only. Not for drug, food or household use.

1.3. Name, Address, and Telephone of the Responsible Party

Manufacturer

Quality Science Labs, LLC

P.O. Box 159, 37888 Highway 24

Lake George, CO 80827

Tel: 866.700.1884

<https://www.qualitysciencelabs.com/>

1.4. Emergency Telephone Number

Emergency Number : CHEMTREC 24 Hour Emergency: Phone Number (800) 424-9300

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Repr. 1B H360

STOT RE 1 H372

Aquatic Acute 3 H402

Aquatic Chronic 3 H412

Full text of hazard classes and H-statements : see Section 16.

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :



GHS08

Signal Word (GHS-US) :

Danger

Hazard Statements (GHS-US) :

H360 - May damage fertility or the unborn child.

H372 - Causes damage to organs (thyroid gland) through prolonged or repeated exposure.

H402 - Harmful to aquatic life.

H412 - Harmful to aquatic life with long lasting effects.

Precautionary Statements (GHS-US) :

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P260 - Do not breathe vapors, mist, or spray.

P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P273 - Avoid release to the environment.

P280 - Wear protective gloves, protective clothing, and eye protection.

P308+P313 - If exposed or concerned: Get medical advice/attention.

P314 - Get medical advice/attention if you feel unwell.

P405 - Store locked up.

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

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3.2. Mixture

Name	Synonyms	Product Identifier	%	GHS US classification
Water	AQUA / Aqua	(CAS-No.) 7732-18-5	96	Not classified
Potassium iodide (KI)	Potassium iodide / POTASSIUM IODIDE	(CAS-No.) 7681-11-0	2	Repr. 1B, H360 STOT RE 1, H372
Iodine		(CAS-No.) 7553-56-2	2	Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-phrases: see Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

First-aid Measures After Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: May damage fertility. May damage the unborn child. Causes damage to organs (thyroid gland) through prolonged or repeated exposure.

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: May damage fertility or the unborn child. Causes damage to organs (thyroid gland) through prolonged or repeated exposure.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Potassium oxides. Iodine.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray.

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6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Avoid excessive temperatures which enhance evaporation.

Incompatible Materials: Metals or unsaturated organic compounds, ammonia solutions or alkaline solutions of ammonia salts. Will form explosive nitrogen iodides when reacted with gaseous ammonia.

7.3. Specific End Use(s)

For laboratory use only. Not for drug, food or household use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in Section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Iodine (7553-56-2)		
USA ACGIH	ACGIH TWA (ppm)	0.01 ppm (inhalable fraction and vapor)
USA ACGIH	ACGIH STEL (ppm)	0.1 ppm (aerosol and vapor)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL (ceiling) (mg/m ³)	1 mg/m ³
USA NIOSH	NIOSH REL (ceiling) (ppm)	0.1 ppm
USA IDLH	US IDLH (ppm)	2 ppm
USA OSHA	OSHA PEL (Ceiling) (mg/m ³)	1 mg/m ³
USA OSHA	OSHA PEL (Ceiling) (ppm)	0.1 ppm

8.2. Exposure Controls

Appropriate Engineering Controls

: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.



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Materials for Protective Clothing	: Chemically resistant materials and fabrics.
Hand Protection	: Wear protective gloves.
Eye and Face Protection	: Chemical safety goggles.
Skin and Body Protection	: Wear suitable protective clothing.
Respiratory Protection	: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.
Other Information	: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Deep Amber Liquid
Odor	: Characteristic Odor
Odor Threshold	: No data available
pH	: ≈ 6.3
Evaporation Rate	: < 1
Melting Point	: No data available
Freezing Point	: ≈ 0 °C (32 °F)
Boiling Point	: ≈ 100 °C (212 °F)
Flash Point	: Not flammable
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapor Pressure	: 14 (Water)
Relative Vapor Density at 20°C	: 0.7 (Water)
Relative Density	: No data available
Specific Gravity	: 1 (Water)
Solubility	: Water: Complete
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Stable under recommended handling and storage conditions (see Section 7).
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials.
- 10.5. Incompatible Materials:** Metals or unsaturated organic compounds, ammonia solutions or alkaline solutions of ammonia salts. Will form explosive nitrogen iodides when reacted with gaseous ammonia.
- 10.6. Hazardous Decomposition Products:** None expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity: Not classified

Iodine (7553-56-2)	
LD50 Oral Rat	14000 mg/kg
LD50 Dermal Rabbit	1425 mg/kg
LC50 Inhalation Rat	0.363 mg/l/4h
LC50 Inhalation Rat	> 4.588 mg/l/4h
ATE (Dermal)	1,425.00 mg/kg body weight
ATE (Dust/Mist)	1.50 mg/l/4h

Skin Corrosion/Irritation: Not classified

pH: ≈ 6.3

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Serious Eye Damage/Irritation: Not classified

pH: ≈ 6.3

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive Toxicity: May damage fertility or the unborn child.

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (thyroid gland) through prolonged or repeated exposure.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Harmful to aquatic life with long lasting effects. Harmful to aquatic life.

Potassium iodide (KI) (7681-11-0)	
LC50 Fish 1	896 mg/l LC50/96h/Oncorhynchus mykiss
Iodine (7553-56-2)	
LC50 Fish 1	1.67 mg/l (Exposure time: 95 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	0.55 mg/l (Exposure time: 48 h - Species: Daphnia magna [static])
ErC50 (Algae)	0.13 mg/l (Exposure time: 72 h - Species: Desmodesmus subspicatus [static])

12.2. Persistence and Degradability

IODINE-POTASSIUM IODIDE SOLUTION, 2%	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential

IODINE-POTASSIUM IODIDE SOLUTION, 2%	
Bioaccumulative Potential	Not established.
Potassium iodide (KI) (7681-11-0)	
BCF Fish 1	0.267 mg/l

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT Not regulated for transport

14.2. In Accordance with IMDG Not regulated for transport

14.3. In Accordance with IATA Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

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SARA Section 311/312 Hazard Classes	Health hazard - Specific target organ toxicity (single or repeated exposure) Health hazard - Reproductive toxicity
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Potassium iodide (KI) (7681-11-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Iodine (7553-56-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State Regulations

Iodine (7553-56-2)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision	: 05/08/2019
Other Information	: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

GHS Full Text Phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Repr. 1B	Reproductive toxicity Category 1B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)