

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
 Issue date: 5/10/2024 Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
 Product name : Lugol's Iodine Working Solution  
 Product code : 6583 & 6929 - all sizes

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : For laboratory and manufacturing use only  
 Restrictions on use : Not for food, drug or household use

#### 1.3. Supplier

Astral Diagnostics  
 Ethos Biosciences, Inc.  
 2070 Center Square Road  
 Logan Township, New Jersey 08085  
 United States  
 T +1-856-224-0900; +1-800-441-0366 Technical Service; Monday-Friday: 8:00 AM-5:00 PM, Eastern US Time  
[www.ethosbiosciences.com](http://www.ethosbiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : 800-424-9300 CHEMTREC (USA) -- 24 Hours/Day, 7 Days/Week

### SECTION 2: Hazard(s) identification


#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (dermal) Category 4	H312	Harmful in contact with skin
Acute toxicity (inhalation:dust,mist) Category 4	H332	Harmful if inhaled
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2B	H320	Causes eye irritation
Hazardous to the aquatic environment – Acute Hazard Category 1	H400	Very toxic to aquatic life
Full text of H statements : see section 16		

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) : 

Signal word (GHS US) : Warning

Hazard statements (GHS US) : H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled  
 H315 - Causes skin irritation  
 H320 - Causes eye irritation  
 H400 - Very toxic to aquatic life

Precautionary statements (GHS US) : P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.  
 P264 - Wash hands, forearms and face thoroughly after handling.  
 P270 - Do not eat, drink or smoke when using this product.  
 P271 - Use only outdoors or in a well-ventilated area.

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P273 - Avoid release to the environment.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.  
P302+P352 - If on skin: Wash with plenty of water.  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 - Call a poison center or doctor if you feel unwell.  
P321 - Specific treatment (see supplemental first aid instruction on this label).  
P322 - Specific treatment (see supplemental first aid instruction on this label)  
P330 - Rinse mouth.  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P391 - Collect spillage.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	Conc.	GHS US classification
Water	CAS-No.: 7732-18-5	99	Not classified
iodine	CAS-No.: 7553-56-2	0.7	Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
potassium iodide	CAS-No.: 7681-11-0	0.3	STOT RE 1, H372 Aquatic Chronic 2, H411

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

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a poison center/doctor/physician if you feel unwell.  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.  
First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

First-aid measures after eye contact	: 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.
First-aid measures after ingestion	: Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	: Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Mild eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.
------------------	---

#### 6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
Emergency procedures	: Ventilate spillage area. Avoid contact with skin, eyes and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

#### 6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Evacuate unnecessary personnel. Stop leak if safe to do so.

### 6.2. Environmental precautions

Avoid release to the environment.

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 6.3. Methods and material for containment and cleaning up

For containment	: Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up	: Take up liquid spill into absorbent material.
Other information	: Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed	: Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling	: Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray.
Hygiene measures	: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep cool. Protect from sunlight.
Packaging materials	: Store always product in container of same material as original container.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### iodine (7553-56-2)

##### USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA	0.001 ppm (Inhalable fraction and vapor)
---------------	--

#### potassium iodide (7681-11-0)

##### USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA	0.01 mg/m <sup>3</sup> (Inhalable fraction)
---------------	---

### 8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Personal protective equipment:

Wear recommended personal protective equipment.

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>Skin and body protection:</b>
Wear suitable protective clothing
<b>Respiratory protection:</b>
[In case of inadequate ventilation] wear respiratory protection.

**Personal protective equipment symbol(s):**



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: brown to reddish brown
Odor	: iodine odor
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

iodine	
Boiling point	184 °C (1013 hPa)
Flash point	Not applicable
Vapor pressure	0.31 hPa (25 °C)
Vapor pressure at 50°C	3 hPa (Antoine equation)

potassium iodide	
Boiling point	1323 °C
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Vapor pressure	< 0.01 hPa (20 °C)

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.  
Acute toxicity (dermal) : Harmful in contact with skin.  
Acute toxicity (inhalation) : Inhalation:dust,mist: Harmful if inhaled.

Lugol's Iodine Working Solution	
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (dust, mist)	1.5 mg/l/4h
iodine (7553-56-2)	
LD50 dermal rabbit	1425 – 2000 mg/kg body weight (EPA OPPTS 870.1200: Acute Dermal Toxicity, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 4.588 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 14 day(s))
ATE US (dermal)	1425 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

potassium iodide (7681-11-0)	
LD50 oral rat	2779 mg/kg (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 7 - 14 day(s))
LD50 dermal rat	> 2000 mg/kg (OECD 402: Acute Dermal Toxicity, Rat, Male / female, Literature study, Dermal)
ATE US (oral)	2779 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.

iodine (7553-56-2)	
pH	5.4

potassium iodide (7681-11-0)	
pH	6.9 (5 %, 20 °C)

Serious eye damage/irritation : Causes eye irritation.

iodine (7553-56-2)	
pH	5.4

potassium iodide (7681-11-0)	
pH	6.9 (5 %, 20 °C)

Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified  
Reproductive toxicity : Not classified  
STOT-single exposure : Not classified  
STOT-repeated exposure : Not classified

potassium iodide (7681-11-0)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified  
Viscosity, kinematic : No data available

potassium iodide (7681-11-0)	
Viscosity, kinematic	Not applicable (solid)

Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.

Symptoms/effects after skin contact : Irritation.  
Symptoms/effects after eye contact : Mild eye irritation.  
Symptoms/effects after ingestion : None under normal conditions.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

iodine (7553-56-2)	
LC50 - Fish [1]	1.67 mg/l (96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Lethal)
EC50 72h - Algae [1]	0.13 mg/l (OECD 201: Alga, Growth Inhibition Test, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Growth rate)

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<b>potassium iodide (7681-11-0)</b>	
LC50 - Fish [1]	3780 mg/l (Equivalent or similar to OECD 203, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Read-across, Lethal)
EC50 - Crustacea [1]	7.5 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)

### 12.2. Persistence and degradability

<b>Lugol's Iodine Working Solution</b>	
Persistence and degradability	Not rapidly degradable

<b>iodine (7553-56-2)</b>	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

<b>potassium iodide (7681-11-0)</b>	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

<b>Water (7732-18-5)</b>	
Persistence and degradability	Not rapidly degradable

### 12.3. Bioaccumulative potential

<b>iodine (7553-56-2)</b>	
Partition coefficient n-octanol/water (Log Pow)	2.49 (QSAR, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

<b>potassium iodide (7681-11-0)</b>	
Bioaccumulative potential	Not bioaccumulative.

### 12.4. Mobility in soil

<b>iodine (7553-56-2)</b>	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.21 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

<b>potassium iodide (7681-11-0)</b>	
Ecology - soil	No (test)data on mobility of the substance available.

### 12.5. Other adverse effects

No additional information available



# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.

### SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

#### 14.1. UN number

Not regulated for transport

#### 14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not regulated
Proper Shipping Name (TDG)	: Not regulated
Proper Shipping Name (IMDG)	: Not regulated
Proper Shipping Name (IATA)	: Not regulated

#### 14.3. Transport hazard class(es)

##### DOT

Transport hazard class(es) (DOT) : Not regulated

##### TDG

Transport hazard class(es) (TDG) : Not regulated

##### IMDG

Transport hazard class(es) (IMDG) : Not regulated

##### IATA

Transport hazard class(es) (IATA) : Not regulated

#### 14.4. Packing group

Packing group (DOT)	: Not regulated
Packing group (TDG)	: Not regulated
Packing group (IMDG)	: Not regulated
Packing group (IATA)	: Not regulated

#### 14.5. Environmental hazards

Other information : No supplementary information available.

#### 14.6. Special precautions for user

##### DOT

Not regulated

##### TDG

Not regulated

##### IMDG

Not regulated

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### IATA

Not regulated

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

### 15.2. International regulations

#### CANADA

##### iodine (7553-56-2)

Listed on the Canadian DSL (Domestic Substances List)

##### potassium iodide (7681-11-0)

Listed on the Canadian DSL (Domestic Substances List)

##### Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

##### iodine (7553-56-2)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

##### potassium iodide (7681-11-0)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

##### Water (7732-18-5)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

# Lugol's Iodine Working Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

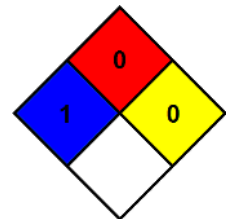
Component	State or local regulations
iodine(7553-56-2)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of hazard classes and H-statements	
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H320	Causes eye irritation
H332	Harmful if inhaled
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

NFPA health hazard	: 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard	: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Material that in themselves are normally stable, even under fire conditions.



Safety Data Sheet (SDS), USA

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness