# SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2020
Date Updated: July 28, 2020

## SECTION 1. - - - - - - - - - PRODUCT AND COMPANY IDENTIFICATION- - - - - - - - - -

| | |
|---|---|
| **Product Name** | Iodine |
| **Product Code(s)** | IB0538 |
| **Recommended Use** | For Laboratory Research Use Only<br>Not for Human or Animal Drug Use |
| **Supplier** | Bio Basic Inc. |
| **Address** | 20 Konrad Crescent, Markham, Ontario,<br>Canada, L3R 8T4 |
| **Telephone** | (905) 474 4493 |
| **Fax** | (905) 474 5794 |
| **For Chemical Emergency Phone#** | (416) 995 9730 |

## SECTION 2. - - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - -

### Classification of the substance or mixture

### GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure, Oral (Category 1), Thyroid, H372 Short-term (acute) aquatic hazard (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS Label elements, including precautionary statements

Pictogram

| | |
|---|---|
| Signal word | Danger |
| Hazard statement(s) | |
| H312 + H332 | Harmful in contact with skin or if inhaled. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H372 | Causes damage to organs (Thyroid) through prolonged or repeated exposure if swallowed. |
| H400 | Very toxic to aquatic life. |
| Precautionary statement(s) | |
| P260 | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. |
| P264 | Wash skin thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |

| | |
|---|---|
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection. |
| P302 + P352 + P312 | IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell. |
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P314 | Get medical advice/ attention if you feel unwell. |
| 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. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |
| P501 | Dispose of contents/ container to an approved waste disposal plant. |

**Hazards not otherwise classified (HNOC) or not covered by GHS** - none

## SECTION 3. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -

| Chemical Name | EC No. | CAS-No | Weight % |
|---|---|---|---|
| Iodine | 231-442-4 | 7553-56-2 | 95-100 |

## SECTION 4. - - - - - - - - - - FIRST-AID MEASURES- - - - - - - - - - -

### Description of first aid measures

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

**Indication of any immediate medical attention and special treatment needed**

No data available

## SECTION 5. - - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - - -

**Extinguishing media**

**Suitable extinguishing media**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special hazards arising from the substance or mixture**
Hydrogen iodide

**Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

**Further information**
No data available

## SECTION 6. - - - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - - - - -

**Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Reference to other sections**
For disposal see section 13.

## SECTION 7. - - - - - - - - - - HANDLING AND STORAGE- - - - - - - - - - -

**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

**Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a dry and well-ventilated place.

Handle and store under inert gas. Hygroscopic.

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

**Specific end use(s)**
Apart from the uses mentioned in section 1 no other specific uses are stipulated

## SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -

**Components with workplace control parameters**

| Components | CAS-No. | Value | Control parameters | Basis |
|---|---|---|---|---|
| Iodine | 7553-56-2 | C | 0.1 ppm<br>1 mg/m3 | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) |
| Remarks | Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required | | | |
| | | C | 0.1 ppm | Québec. Regulation respecting occupational health |

| | | | | |
|---|---|---|---|---|
| | | | 1 mg/m3<br>0.1 ppm | and safety, Schedule 1, Part 1: Permissible exposure<br>values for airborne contaminants |
| | A substance which may not be recirculated in accordance with section 108 | | | |
| | | TWA | 0.010000 ppm | Canada. British Columbia OEL |
| | | STEL | 0.100000 ppm | Canada. British Columbia OEL |
| | | TWA | 0.010000 ppm | USA. ACGIH Threshold Limit Values (TLV) |
| | | STEL | 0.100000 ppm | USA. ACGIH Threshold Limit Values (TLV) |

**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11
mm Break through time: 480 min

Splash contact Material: Nitrile rubber
Minimum layer thickness: 0.11
mm Break through time: 480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and
approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into

the environment must be avoided.

## SECTION 9. - - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - - -

**Appearance**

| | |
|---|---|
| Form | solid |
| Colour | black, violet |

**Safety data**

| | |
|---|---|
| pH | 5.4 |
| Melting point/freezing point | Melting point/range: 113 °C (235 °F) - lit. |
| Boiling point | 184 °C (363 °F) - lit. |
| Flash point | No data available |
| Ignition temperature | No data available |
| Auto-ignition temperature | No data available |
| Lower explosion limit | No data available |
| Upper explosion limit | No data available |
| Vapour pressure | 0.41 hPa (0.31 mmHg) at 25 °C (77 °F) |
| Density | 4.930 g/cm3 |
| Water solubility | 0.3 g/l at 25 °C (77 °F) - slightly soluble |
| Partition coefficient: n-octanol/water | log Pow: 2.49 at 20 °C (68 °F) |
| Relative vapour density | 8.76 - (Air = 1.0) |
| Odour | pungent |
| Odour Threshold | No data available |
| Evaporation rate | No data available |

## SECTION 10. - - - - - - - - -STABILITY AND REACTIVITY - - - - - - - - -

**Reactivity**
No data available

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
No data available

**Conditions to avoid**
No data available

**Incompatible materials**
Rubber, Plastics, Iron and iron salts., Sulphur compounds, Ammonia, Magnesium, Zinc, Aluminum, Metals, Alkalis, Antimony salts, Arsenites, bromides, chlorides, iodides, thiocyanates, ferrous salts, hypophosphites, morphine salts, oils, creosote, phosphates, tannins, tartrates, Mixing iodine, antimony, and ammonia resulted in an explosion. A violent reaction occurs between iodine and acetaldehyde., Acetylene, Acetaldehyde, Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Hydrogen iodide Other decomposition products - No data available
In the event of fire: see section 5

## SECTION 11. - - - - - - - - - TOXICOLOGICAL INFORMATION - - - - - - - -

**Acute toxicity**

LD50 Oral - Rat - 14,000 mg/kg Remarks: Diarrhoea

LC50 Inhalation - Rat - 4 h - > 4.588 mg/l (OECD Test Guideline 403)

Remarks: Cough Respiratory disorder LC50 Dermal - Rat - male - 1,425 mg/kg (OPPTS 870.1200)
No data available

**Skin corrosion/irritation**

Skin - reconstructed human epidermis (RhE) Result: Moderate skin irritation

**Serious eye damage/eye irritation**

Moderate eye irritation

**Respiratory or skin sensitisation**

- Mouse

Result: Does not cause skin sensitisation. (OECD Test Guideline 429)

**Germ cell mutagenicity**

Hamster
Embryo
Result: negative
Mutagenicity (micronucleus test)

Mouse - male and female
Result: negative

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation. - Respiratory system

**Specific target organ toxicity - repeated exposure**

Oral - Causes damage to organs through prolonged or repeated exposure. - Thyroid

**Aspiration hazard**

No data available

**Additional Information**

RTECS: NN1575000

Prolonged exposure to iodides may produce iodism in sensitive individuals. Symptoms of exposure include: skin rash, running nose, headache and irritation of the mucous membrane. For severe cases the skin may show pimples, boils, hives, blisters and black and blue spots. Iodides are readily diffused across the placenta. Neonatal deaths from respiratory distress secondary to goiter have been reported. Iodides have been known to cause drug-induced fevers, which are usually of short duration., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

## SECTION 12. - - - - - - - - - ECOLOGICAL INFORMATION - - - - - - - - - -

**Toxicity**

| | |
|---|---|
| Toxicity to fish | LC50 - Oncorhynchus mykiss (rainbow trout) - 1.7 mg/l - 96.0 h |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 0.2 mg/l - 48 h |
| Toxicity to algae | Growth inhibition EC50 - Desmodesmus subspicatus (green algae) - 0.13 mg/l Method: OECD Test Guideline 201 |

**Persistence and degradability**
No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available

**Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**Other adverse effects**
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life. No data available

## SECTION 13. - - - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - - - -

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.

## SECTION 14. - - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - -

**DOT (US)**
UN number: 3495 Class: 8 (6.1) Packing group: III
Proper shipping name: Iodine
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

**IMDG**
UN number: 3495 Class: 8 (6.1) Packing group: III EMS-No: F-A, S-B
Proper shipping name: IODINE
Marine pollutant: No

**IATA**
UN number: 3495 Class: 8 (6.1) Packing group: III
Proper shipping name: Iodine

## SECTION 16. - - - - - - - - - - OTHER INFORMATION- - - - - - - - - - -

Further information: no limited for paper copy, just for internal uses.
For research use only. Not intended for human or animal diagnostic or therapeutic uses.

**Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

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**End of SDS**