# ENGLISH

## SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**1.1 Product identifiers**
Product name: Iodine Solution
Product Number: : 81009-80409

**1.2 Identified uses of the relevant substance or mixture and uses advised against**
Identified uses relevant: Professional uses, Health Services, scientific research and development

**1.3 Details of the supplier of the safety data sheet**
Manufacturer/Supplier: Liofilchem®
Address: Via Scozia, 64026 - Roseto degli Abruzzi (TE)
Telephone number: 085/8930745
Fax number: 085/8930330
E-mail address: liofilchem@liofilchem.com

**1.4 Emergency telephone number**
Poison control centers
Pavia - 038224444;
Milano - 0266101029;
Bergamo - 800883300;
Verona - 800011858;
Firenze - 0557947819;
Roma - Gemelli 063054343;
Roma - Umberto I 0649978000;
Roma - Bambino Gesù 0668593726;
Napoli - 0815453333;
Foggia - 800183459.

## SECTION 2. HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture**

The product is classified as dangerous pursuant to the provisions of Regulation (EC) 1272/2008 (CLP) (and subsequent amendments and adjustments). The product therefore requires a safety data sheet compliant with the provisions of Regulation (EC) 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

**Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**
STOT RE 2, Specific target organ toxicity — repeated exposure (Category 2); H373

**2.2 Label elements**
**Labelling according Regulation (EC) No 1272/2008 [CLP]**

***Pictogram***



***Signal word*** Warning

***Hazard statement(s)***

H373 May cause damage to organs through prolonged or repeated

***Precautionary statement(s)***

P314 Get medical advice / attention if you feel unwell.

***Supplemental Hazard Statements -*** none

**2.3 Other hazards** – This substance/mixture does not contain components considered to be both persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at concentrations of 0.1% or higher.
The substance/mixture does not contain components considered to have endocrine disrupting properties in accordance with Article 57(f) of REACH or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

**3.2 Mixtures:**

**Hazardous substances**

| CAS n° | EC n° | Index n° | Registration number REACH | Concentration | Classification according Regulation (EC) No 1272/2008 |
|---|---|---|---|---|---|
| **Potassium iodide** | | | | | |
| 7681-11-0 | 231-659-4 | - | 01-2119966161-40-XXXX | 2.0 % | STOT RE 1 H372 |
| **Iodine** | | | | | |
| 7553-56-2 | 231-442-4 | 053-001-00-3 | 01-2119485285-30-XXXX | 1,0 % | Acute Tox.4 H302<br>Acute Tox. 4 H312<br>Acute Tox. 4 H332<br>Skin Irrit. 2 H315<br>Eye Irrit. 2 H319<br>STOT SE 3 H335<br>STOT RE 1 H372<br>Aquatic Acute 1 H400 |

**Additional Information:**
For full text of H-statements, see SECTION 16

## SECTION 4. FIRST AID MEASURES

**4.1 Description of first aid measures**

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.
INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

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

For symptoms and effects due to the substances contained, see chap. 11..

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

No data available

## SECTION 5. FIRE-FIGHTING MEASURES

**5.1 Extinguishing media**
SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

**5.2 Special hazards arising from the substance or mixture**
HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

**5.3 Advice for firefighters**

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2 Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

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

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4 Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

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

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details..

### 7.3 Specific end uses

Apart from the uses described in section 1.2 are not covered other specific uses.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

- **POTASSIUM IODIDE**

**Threshold Limit Value**

| Type | Country | TWA/8h | | STEL/15min | | Remarks / Observations |
|---|---|---|---|---|---|---|
| | | mg/m3 | ppm | mg/m3 | ppm | |
| TLV-ACGIH | | | 0,01 | | | A4; Hypothyroidism; URT irr |

| Predicted no-effect concentration - PNEC | | |
|---|---|---|
| Normal value in fresh water | 0,007 | mg/l |
| Normal value for fresh water sediment | 0,007 | mg/kg/d |
| Normal value for the food chain (secondary poisoning) | 0,3 | mg/kg |
| Normal value for the terrestrial compartment | 0,0397 | mg/kg |

**Health - Derived no-effect level - DNEL / DMEL**

| | Effects on consumers | | | | Effects on workers | | | |
|---|---|---|---|---|---|---|---|---|
| Route of exposure | Acute local | Acute systemic | Chronic local | Chronic systemic | Acute local | Acute systemic | Chronic local | Chronic systemic |
| Oral | | 0,01 mg/kg bw/d | | 0,01 mg/kg bw/d | | | | |
| Inhalation | | | | 0,035 mg/m3 | | | | 0,07 mg/m3 |
| Skin | | | | 1 mg/kg bw/d | | | | 1 mg/kg bw/d |

legend:

- **Iodine (CAS 7553-56-2)**
  Long-term worker DNEL – dermal (systemic effects - acute) – 0.01 mg/kg
  Long-term worker DNEL – dermal (systemic effects - chronic) – 0.01 mg/kg

  Long-term worker DNEL – inhalation (systemic effects - acute)– 1 mg/m$^3$
  Long-term worker DNEL – inhalation (systemic effects - chronic)– 0.07 mg/m$^3$

  PNEC:
  - Aquatic compartment – freshwater 0.01 mg/L
  - Aquatic compartment – marine water 0.06 mg/L
  - Aquatic compartment – sediment in freshwater 3.99 mg/kg
  - Aquatic compartment – sediment in marine water 20.22 mg/kg
  - Terrestrial compartment – soil 5.95 mg/kg
  - Sewage treatment plant 11 mg/L

**8.2 Exposure controls**
As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. When choosing personal protective equipment, ask your chemical substance supplier for advice. Personal protective equipment must be CE marked, showing that it complies with applicable standards. Provide an emergency shower with face and eye wash station. Exposure levels must be kept as low as possible to avoid significant build-up in the organism. Manage personal protective equipment so as to guarantee maximum protection (e.g. reduction in replacement times).
HAND PROTECTION
Protect hands with category III work gloves (see standard EN 374).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability. The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.
SKIN PROTECTION
Wear category II professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.
Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.
EYE PROTECTION
Wear airtight protective goggles (see standard EN 166).
RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.
ENVIRONMENTAL EXPOSURE CONTROLS
The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.
Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Information on basic physical and chemical properties**

| | | |
|---|---|---|
| **Appearance** | | |
| Form | Liquid | |
| Color | Red | |
| **Odour** | | characteristic |
| **pH** | | No data available |
| **Melting point/ freezing point** | | No data available |
| **Initial boiling point and boiling range** | | No data available |
| **Evaporation rate** | | No data available |
| **Flammability (solid, gas)** | | No data available |
| **Upper / lower flammability or explosive limits** | | No data available |
| **Flash point** | | No data available |
| **Auto-ignition temperature** | | Not applicable |
| **Decomposition temperature** | | Not applicable |

| | |
|---|---|
| **Vapour pressure** | No data available |
| **Vapour density** | No data available |
| **Relative density** | No data available |
| **Water solubility** | Soluble |
| **Partition coefficient: n-octanol/water** | Not applicable |
| **Viscosity** | No data available |
| **Explosive properties** | No data available |
| **Oxidizing properties** | No data available |

**9.2 Other safety information**

None

## SECTION 10. STABILITY AND REACTIVITY

**10.1 Reactivity**
There are no particular risks of reaction with other substances in normal conditions of use.

**10.2 Chemical stability**
The product is stable in normal conditions of use and storage.

**10.3 Possibility of hazardous reactions**
No hazardous reactions are foreseeable in normal conditions of use and storage

**10.4 Conditions to avoid**
None. However the usual precautions used for chemical products should be respected.

**10.5 Incompatible materials**
Oxidising agents,strong acids,metals.

**10.6 Hazardous decomposition products**
When heated to decomposition releases: iodine,iododric acid,potassium oxides.
Decomposes on heating, developing sulfur and sodium oxides.

## SECTION 11. TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

**POTASSIUM IODIDE**
Acute toxicity
LD50 (Oral). 3118 mg / kg rat
Skin corrosion / irritation
Does not meet the classification criteria for this hazard class
Corrosion to the respiratory tract
Does not meet the classification criteria for this hazard class
Serious eye damage / eye irritation
Does not meet the classification criteria for this hazard class
Germ cell mutagenicity
Does not meet the classification criteria for this hazard class
Carcinogenicity
Does not meet the classification criteria for this hazard class
Reproductive toxicity
Does not meet the classification criteria for this hazard class
Specific target organ toxicity (STOT) - single exposure
Does not meet the classification criteria for this hazard class
Specific target organ toxicity (STOT) - repeated exposure
May cause damage to organs
Aspiration hazard
Does not meet the classification criteria for this hazard class
Likely routes of exposure

**IODINE**
Acute toxicity
LD50 (Oral). 315 mg / kg rat
LD50 (Dermal): 1425 mg/kg rabbit
Skin corrosion / irritation
Does not meet the classification criteria for this hazard class
Corrosion to the respiratory tract
Does not meet the classification criteria for this hazard class
Serious eye damage / eye irritation
Does not meet the classification criteria for this hazard class
Germ cell mutagenicity
Does not meet the classification criteria for this hazard class
Carcinogenicity
Does not meet the classification criteria for this hazard class
Reproductive toxicity
Does not meet the classification criteria for this hazard class
Specific target organ toxicity (STOT) - single exposure
Does not meet the classification criteria for this hazard class
Specific target organ toxicity (STOT) - repeated exposure
No data available
Aspiration hazard
Does not meet the classification criteria for this hazard class
Likely routes of exposure

### 11.2 Other informations

Endocrine disrupting properties: The substance/mixture does not contain components considered to have endocrine disrupting properties in accordance with Article 57(f) of REACH or Commission Delegated Regulation (EU) 2017/2100 or Regulation (EU) 2018/605 of the Commission at levels of 0.1% or higher

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

**POTASSIUM IODIDE**
LC50 - Fishes.
> 3780 mg/l/96h Oncorhynchus mykiss
EC50 - Crustacea
7,5 mg/l/48h Daphnia magna

**IODINE**
EC50 (72h) → Aquatic plants 0.13 mg/L
EC50 (48h) → Daphnia magna 0.55 mg/L
LC50 (96h) → Fish 1.67 mg/l

### 12.2 Persistence and degradability
Information not available

### 12.3 Bioaccumulative potential
Information not available

### 12.4 Mobility in soil
Information not available

### 12.5 Results of PBT and vPvB assessment
This mixture contains no substances evaluated PBT or vPvB

### 12.6 Endocrine disrupting properties
The mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects
None

## SECTION 13. DISPOSAL CONSIDERATIONS

**13.1 Waste treatment methods**
**Product**
Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Waste transportation may be subject to ADR restrictions.

**Contaminated packaging**
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## SECTION 14. TRANSPORT INFORMATION

**14.1 UN number**
ADR/RID: - IMDG: - IATA: -

**14.2 UN proper shipping name**
ADR/RID: not applicable
IMDG: not applicable
IATA: not applicable

**14.3 Transport hazard class(es)**
ADR/RID: - IMDG: - IATA: -

**14.4 Packaging group**
ADR/RID: - IMDG: - IATA: -

**14.5 Environmental hazards**
ADR/RID: no IMDG: no IATA: no

**14.6 Special precautions for user**
no data available

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

no data available

## 15. REGULATORY INFORMATION

This safety datasheet complies with:

- the requirements of European Parliament and of the Council Regulation (EC) No. 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) and Commission Regulation (EU) No. 453/2010 amending Commission Regulation (EC) No. 1907/2006.
- the requirements of Commission Regulation EU 2020/878

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
The product is classified, coded and labeled in accordance with EU Regulation on Hazardous Materials.
The product does not contain any restricted substances – Article XIV & Article XVIII REACH

**15.2 Chemical Safety Assessment**
This product has not been made a chemical safety assessment.

## 16. OTHER INFORMATION

**Text of H code(s) mentioned in Section 3**
Acute Tox. 4 Acute toxicity (Category 4)
Skin Irrit. 2 Skin irritation (Category 2)
Eye Irrit. 2 Eye irritation (Category 2)
STOT SE 3 Specific target organ toxicity - single exposure (Category 3)
STOT RE 1 Specific target organ toxicity - repeated exposure, Oral (Category 1)
Aquatic Acute 1 Acute toxicity to the aquatic environment (Category 1)
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H372 Causes damage thyroid through prolonged or repeated exposure if swallowed

H400 Very toxic to aquatic life

**Abbreviations and acronyms**
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure

**Training advice**
The product must be used by qualified personnel. It is recommended to provide basic training with regard to safety and health at work to ensure proper handling of the product.

**Further information**
The information in this document is based on the present state of our knowledge. The user must ensure the accuracy and completeness of such information in relation to the specific use intended.
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