

Iodine

Version number: GHS 1.0

Date of compilation: 2019-02-20

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

| | |
|---------------------------------|-----------------------------------|
| Identification of the substance | Iodine |
| Registration number (REACH) | this information is not available |
| CAS number | 7553-56-2 |
| Article number | A0001818 |

1.2 Relevant identified uses of the substance or mixture and uses advised against

| | |
|--------------------------|-------------|
| Relevant identified uses | General use |
|--------------------------|-------------|

1.3 Details of the supplier of the safety data sheet

Chemos GmbH & Co. KG
Sonnenring 7
84032 Altdorf
Germany

Telephone: +49 871-966346-0
Telefax: +49 871-966346-13
e-mail: chemos@chemos.de
Website: <http://www.chemos.de/>

e-mail (competent person) chemos@chemos.de

1.4 Emergency telephone number

Emergency information service
This number is only available during the following office hours: Mon - Thu 08:00 AM - 05:00 PM, Fri 08:00 AM - 12:00 PM

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

| Section | Hazard class | Category | Hazard class and category | Hazard statement |
|---------|---|----------|---------------------------|------------------|
| 3.1O | acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| 3.1D | acute toxicity (dermal) | 4 | Acute Tox. 4 | H312 |
| 3.1I | acute toxicity (inhal.) | 4 | Acute Tox. 4 | H332 |
| 3.2 | skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 3.3 | serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |
| 3.8R | specific target organ toxicity - single exposure (respiratory tract irritation) | 3 | STOT SE 3 | H335 |
| 3.9 | specific target organ toxicity - repeated exposure | 1 | STOT RE 1 | H372 |
| 4.1A | hazardous to the aquatic environment - acute hazard | 1 | Aquatic Acute 1 | H400 |

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure. Spillage and fire water can cause pollution of watercourses.

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2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

- Signal word danger

- Pictograms

GHS07, GHS08, GHS09



- Hazard statements

| | |
|----------------|---|
| 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 to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |

- Precautionary statements

| | |
|-----------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P312 | Call a POISON CENTRE/doctor if you feel unwell. |
| P391 | Collect spillage. |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P501 | Dispose of contents/container to industrial combustion plant. |

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-------------------|----------------|
| Name of substance | Iodine |
| Identifiers | |
| CAS No | 7553-56-2 |
| EC No | 231-442-4 |
| Index No | 053-001-00-3 |
| Molecular formula | I ₂ |
| Molar mass | 253.8 g/mol |

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

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Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water, Foam, ABC-powder

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

Nitrogen oxides (NO_x), Hydrogen iodide (HI)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains, Take up mechanically

Advices on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

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6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

- Specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Removal of dust deposits.

- Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| Occupational exposure limit values (Workplace Exposure Limits) | | | | | | | | | | | |
|--|---------------|-----------|------------|-----------|-------------|------------|--------------|-----------------|-------------------|----------|-----------|
| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m³] | STEL [ppm] | STEL [mg/m³] | Ceiling-C [ppm] | Ceiling-C [mg/m³] | Notation | Source |
| GB | iodine | 7553-56-2 | WEL | | | 0.1 | 1.1 | | | | EH40/2005 |

Notation

Ceiling-C
STEL

ceiling value is a limit value above which exposure should not occur
short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours
time-weighted average (unless otherwise specified)

TWA

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Human health values

| Relevant DNELs and other threshold levels | | | | |
|---|------------------------|------------------------------------|-------------------|----------------------------|
| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| DNEL | 0.07 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| DNEL | 0.01 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

Environmental values

| Relevant PNECs and other threshold levels | | | | |
|---|-----------------|-----------------------|------------------------------|------------------------------|
| Endpoint | Threshold level | Organism | Environmental compartment | Exposure time |
| PNEC | 18.13 µg/l | aquatic organisms | freshwater | short-term (single instance) |
| PNEC | 60.01 µg/l | aquatic organisms | marine water | short-term (single instance) |
| PNEC | 11 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| PNEC | 3.99 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| PNEC | 20.22 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| PNEC | 5.95 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

In the case of wanting to use the gloves again, clean them before taking off and air them well.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | |
|----------------|------------------|
| Physical state | solid (crystals) |
| Colour | dark violet |
| Odour | stinging |

Other safety parameters

| | |
|---|-----------------------------------|
| pH (value) | not applicable |
| Melting point/freezing point | 114 °C |
| Initial boiling point and boiling range | 184.4 °C at 1 atm |
| Flash point | not applicable |
| Evaporation rate | not determined |
| Flammability (solid, gas) | non-combustible |
| Explosion limits of dust clouds | not determined |
| Vapour pressure | 0.233 mmHg at 25 °C |
| Density | 4.93 g/cm ³ at 20 °C |
| Vapour density | this information is not available |
| Solubility(ies) | not determined |

Partition coefficient

| | |
|-----------------------------|---------------------|
| - n-octanol/water (log KOW) | 2.49 (20 °C) (ECHA) |
| Auto-ignition temperature | not determined |

Viscosity

| | |
|----------------------|---------------------|
| - Dynamic viscosity | 2.3 mPa s at 115 °C |
| Explosive properties | none |
| Oxidising properties | none |

9.2 Other information

| | |
|---------------|-------|
| Solid content | 100 % |
|---------------|-------|

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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.

- Acute toxicity estimate (ATE)

| | |
|-----------------------|---------------|
| Oral | 500 mg/kg |
| Dermal | 2,000 mg/kg |
| Inhalation: dust/mist | 4.588 mg/l/4h |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

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Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life.

| Aquatic toxicity (acute) | | | |
|--------------------------|-----------|---------|---------------|
| Endpoint | Value | Species | Exposure time |
| LC50 | 1.67 mg/l | fish | 96 h |
| ErC50 | 0.13 mg/l | algae | 72 h |

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

| | |
|---------------------------|---------------------|
| n-octanol/water (log KOW) | 2.49 (20 °C) (ECHA) |
|---------------------------|---------------------|

12.4 Mobility in soil

Data are not available.

| | |
|----------------------|---------------------------------------|
| Henry's law constant | 0.031 Pa m ³ /mol at 20 °C |
|----------------------|---------------------------------------|

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment-relevant information

Recycling/reclamation of other inorganic materials.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagegings

It is a dangerous waste; only packagegings which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

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SECTION 14: Transport information

| | |
|--|---------------------------------------|
| 14.1 UN number | 3495 |
| 14.2 UN proper shipping name | IODINE |
| 14.3 Transport hazard class(es) | |
| Class | 8 (corrosive substances) |
| Subsidiary risk(s) | 6.1 (acute toxicity) |
| 14.4 Packing group | III (substance presenting low danger) |
| 14.5 Environmental hazards | hazardous to the aquatic environment |
| 14.6 Special precautions for user | |
| Provisions for dangerous goods (ADR) should be complied within the premises. | |
| 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code | |
| The cargo is not intended to be carried in bulk. | |

Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

| | |
|----------------------|----------------------|
| UN number | 3495 |
| Proper shipping name | IODINE |
| Class | 8 |
| Classification code | CT2 |
| Packing group | III |
| Danger label(s) | 8+6.1, fish and tree |



| | |
|-------------------------------|--|
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Special provisions (SP) | 279, 802(ADN) |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| Transport category (TC) | 3 |
| Tunnel restriction code (TRC) | E |
| Hazard identification No | 86 |
| Emergency Action Code | 2WE |

International Maritime Dangerous Goods Code (IMDG)

| | |
|----------------------|--|
| UN number | 3495 |
| Proper shipping name | IODINE |
| Class | 8 |
| Subsidiary risk(s) | 6.1 |
| Marine pollutant | yes (hazardous to the aquatic environment) |
| Packing group | III |

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| | |
|--|--|
| Danger label(s) | 8+6.1, fish and tree |
| | |
| Special provisions (SP) | 279 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |
| EmS | F-A, S-B |
| Stowage category | B |
| International Civil Aviation Organization (ICAO-IATA/DGR) | |
| UN number | 3495 |
| Proper shipping name | Iodine |
| Class | 8 |
| Subsidiary risk(s) | 6.1 |
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Packing group | III |
| Danger label(s) | 8+6.1 |
| | |
| Special provisions (SP) | A113 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 kg |

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------|---|
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road) |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |

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| Abbr. | Descriptions of used abbreviations |
|-----------|---|
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| IMDG | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU.

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

| Code | Text |
|------|-----------------------------------|
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H332 | Harmful if inhaled. |
| H335 | May cause respiratory irritation. |

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| Code | Text |
|------|---|
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.