

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Iodine pure

Revision date: 05.03.2025

Product code: 06154

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

1.1. Product identifier

Iodine pure

REACH Registration Number: 01-2119485285-30-XXXX
 CAS No: 7553-56-2
 Index No: 053-001-00-3
 EC No: 231-442-4

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

Use of the substance/mixture

Laboratory chemicals
 Industrial uses: Uses of substances as such or in preparations at industrial sites
 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH
 Street: Stempelstraße 6
 Place: D-47167 Duisburg
 Telephone: 0203/5194-0
 E-mail: info@analytichem.de
 Contact person: Abteilung Produktsicherheit
 E-mail: produktsicherheit@analytichem.de
 Internet: www.analytichem.de
 Responsible Department: Abteilung Produktsicherheit
 Telefax: 0203/5194-290
 Telephone: 0203/5194-107/117

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 4; H302
 Acute Tox. 4; H312
 Acute Tox. 4; H332
 Skin Irrit. 2; H315
 Eye Irrit. 2; H319
 STOT SE 3; H335
 STOT RE 1; H372
 Aquatic Acute 1; H400

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

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Pictograms:



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 (thyroid gland) through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.

Precautionary statements

P273	Avoid release to the environment.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
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.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Sum formula:	I ₂
Molecular weight:	253.8 g/mol

Relevant ingredients

CAS No	Chemical name	Quantity
	EC No	Index No
		REACH No
	Classification (Regulation (EC) No 1272/2008)	
7553-56-2	iodine	100 %
	231-442-4	053-001-00-3
		01-2119485285-30
	Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT RE 1, Aquatic Acute 1; H332 H312 H315 H319 H335 H372 H400	

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7553-56-2	231-442-4	iodine	100 %
		inhalation: ATE = 11 mg/l (vapours); inhalation: LC50 = > 4,588 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg	

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No data available

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After inhalation

Provide fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

After contact with skin

Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing.
Protect uninjured eye.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

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

Irritant
Conjunctival oedema (chemosis).
Asthmatic complaints
Fever
Gastrointestinal complaints
Circulatory collapse
Dermatitis

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

Give sodium sulfate as laxative (1 tablespoon in 1 glass of water).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Non-combustible solids
Hazardous combustion products
In case of fire may be liberated: Hydrogen iodide (HI)

5.3. Advice for firefighters

Do not inhale explosion and combustion gases.
Avoid contact with skin, eyes and clothes.
In case of fire: Wear self-contained breathing apparatus.

Additional information

Suppress gases/vapours/mists with water spray jet.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.

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Remove persons to safety.
Emergency procedures
Consult an expert
Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.
Prevent spread over a wide area (e.g. by containment or oil barriers).
Collect in closed and suitable containers for disposal.
Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.
Avoid dust formation. Do not breathe dust.
When using do not eat, drink, smoke, sniff. Keep container tightly closed.
Use personal protection equipment. Use extractor hood (laboratory).
Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities
Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary.
Take off immediately all contaminated clothing and wash it before reuse.
If handled uncovered, arrangements with local exhaust ventilation have to be used.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a well-ventilated place. Keep container tightly closed.
Store in a place accessible by authorized persons only.

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Hints on joint storage

national regulations

Further information on storage conditions

Store in a dry place.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
7553-56-2	Iodine (Inhalable Fraction and Vapour)	0.01	-		TWA (8 h)	
		0.1	-		STEL (15 min)	

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
7553-56-2	iodine			
Worker DNEL, long-term		inhalation	systemic	0,07 mg/m ³
Worker DNEL, long-term		dermal	systemic	0,01 mg/kg bw/day

PNEC values

CAS No	Substance	Value
7553-56-2	iodine	
Environmental compartment		
Freshwater		0,01813 mg/l
Marine water		0,06001 mg/l
Freshwater sediment		3,99 mg/kg
Marine sediment		20,22 mg/kg
Micro-organisms in sewage treatment plants (STP)		11 mg/l
Soil		5,95 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Avoid dust formation. Do not breathe dust.

Individual protection measures, such as personal protective equipment

Eye/face protection

goggles

Wear eye protection/face protection.

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

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By long-term hand contact
Trade name/designation KCL 741 Dermatril® L
Suitable material: NBR (Nitrile rubber) 0,11 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact
Trade name/designation KCL 741 Dermatril® L
Suitable material: NBR (Nitrile rubber) 0,11 mm
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.
Take off immediately all contaminated clothing.
Wash hands before breaks and after work.
The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Respiratory protection necessary at: dust formation
Filtering device with filter or ventilator filtering device of type: B-(P2)
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid	
Colour:	dark violet	
Odour:	stinging	
Odour threshold:	No data available	
Melting point/freezing point:		114 °C
Boiling point or initial boiling point and boiling range:		185 °C
Flammability:		No data available
Lower explosion limits:		No data available
Upper explosion limits:		No data available
Flash point:		No data available
Auto-ignition temperature:		No data available
Decomposition temperature:		No data available
pH-Value:		5,4
Viscosity / kinematic: (at 116 °C)		0,57 mm ² /s
Water solubility: (at 20 °C)		0,3 g/l
Solubility in other solvents		
No data available		
Dissolution rate:		No data available

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Partition coefficient n-octanol/water:	log Pow: 2,49
Dispersion stability:	No data available
Vapour pressure: (at 25 °C)	0,41 hPa
Vapour pressure:	No data available
Density (at 20 °C):	4,93 g/cm ³
Relative density:	No data available
Bulk density:	~2100 kg/m ³
Relative vapour density:	No data available
Particle characteristics:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties	
No data available	
Sustaining combustion:	No data available
Self-ignition temperature	
Solid:	No data available
Gas:	No data available
Oxidizing properties	
No data available	

Other safety characteristics

Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	0
Solid content:	100%
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
No data available:	
Viscosity / dynamic: (at 116 °C)	2,27 mPa·s
Flow time:	No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

No data available

10.3. Possibility of hazardous reactions

Reducing agent, Alkali metals, Acetylene, Ammonia (NH₃), boron mercury (Hg), Metal powder, Fluorine, Formaldehyde
White/yellow phosphor, SULPHUR, titanium, Combustible substance,
Gasoline, Diethyl ether, Alkaline earth metal, Chlorine (Cl₂), Zinc, Iron.

10.4. Conditions to avoid

No data available

10.5. Incompatible materials

No data available

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10.6. Hazardous decomposition products

In case of fire may be liberated:
SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicokinetics, metabolism and distribution

No data available

Acute toxicity

Harmful if swallowed.
Harmful in contact with skin.
Harmful if inhaled.
Mucous membrane irritation in the mouth, throat, esophagus and gastrointestinal tract.
Resorption (by inhalation)
Resorption (dermal)

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7553-56-2	iodine				
	dermal	LD50 > 2000 mg/kg	Rabbit	Study report (2006)	EPA OPPTS 870.1200
	inhalation vapour	ATE 11 mg/l			
	inhalation (4 h) dust/mist	LC50 > 4,588 mg/l	Rat	Study report (2008)	OECD Guideline 403

Irritation and corrosivity

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/eye irritation: Causes serious eye irritation.
Dermatitis

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. (iodine)

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure. (iodine)

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

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Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

No data available

Further information

Irritant

Conjunctival oedema (chemosis).

Asthmatic complaints

Fever

Gastrointestinal complaints

Circulatory collapse

Dermatitis

SECTION 12: Ecological information

12.1. Toxicity

Very toxic to aquatic life.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
7553-56-2	iodine					
	Acute fish toxicity	LC50 mg/l	1,67	96 h	Oncorhynchus mykiss	Publication (1995) other: Ontario Ministry of the Environme
	Acute algae toxicity	ErC50 mg/l	0,13	72 h	Desmodesmus subspicatus	Study report (2010) OECD Guideline 201
	Acute crustacea toxicity	EC50 mg/l	0,59	48 h	Daphnia magna	Publication (1995) other: Ontario Ministry of the Environme
	Acute bacteria toxicity	EC50 ()	280 mg/l	3 h	activated sludge of a predominantly domestic sewage	Study report (2010) OECD Guideline 209

12.2. Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
7553-56-2	iodine	2,49

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

Discharge into the environment must be avoided.

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Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations.

Do not allow to enter into surface water or drains.

Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 3495
14.2. UN proper shipping name:	IODINE
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8+6.1
Classification code:	CT2
Special Provisions:	279
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	3
Hazard No:	86
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 3495
14.2. UN proper shipping name:	IODINE
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8+6.1
Classification code:	CT2
Special Provisions:	279 802
Limited quantity:	5 kg
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 3495
14.2. UN proper shipping name:	IODINE
14.3. Transport hazard class(es):	8
14.4. Packing group:	III
Hazard label:	8+6.1
Special Provisions:	279
Limited quantity:	5 kg
Excepted quantity:	E1
EmS:	F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 3495
14.2. UN proper shipping name:	IODINE

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14.3. Transport hazard class(es):	8	
14.4. Packing group:	III	
Hazard label:	8+6.1	
Special Provisions:	A113 A803	
Limited quantity Passenger:	5 kg	
Passenger LQ:	Y845	
Excepted quantity:	E1	
IATA-packing instructions - Passenger:		860
IATA-max. quantity - Passenger:		25 kg
IATA-packing instructions - Cargo:		864
IATA-max. quantity - Cargo:		100 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	iodine

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 75

Information according to Directive 2012/18/EU (SEVESO III): E1 Hazardous to the Aquatic Environment

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 2 - obviously hazardous to water

SECTION 16: Other information

Abbreviations and acronyms

Acute Tox: Acute toxicity

Skin Irrit: Skin irritation

Eye Irrit: Eye irritation

STOT SE: Specific target organ toxicity - single exposure

STOT RE: Specific target organ toxicity - repeated exposure

Aquatic Acute: Acute aquatic hazard

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
Acute Tox. 4; H312	Calculation method
Acute Tox. 4; H332	Calculation method
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
STOT SE 3; H335	Calculation method
STOT RE 1; H372	Calculation method
Aquatic Acute 1; H400	Calculation method

Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed.

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H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H372	Causes damage to organs (thyroid gland) through prolonged or repeated exposure if swallowed.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.

Further Information

Provide appropriate information, instructions and training to users

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

(The data for the relevant ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)