

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 20.08.2014

Version 16.0

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Catalogue No.	104761
Product name	Iodine sublimated for analysis EMSURE® ACS,ISO,Reag. Ph Eur
REACH Registration Number	01-2119485285-30-XXXX
CAS-No.	7553-56-2

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

Identified uses	Reagent for analysis In compliance with the conditions described in the annex to this safety data sheet.
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1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	EQ-RS * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number **Please contact the regional company representation in your country.**

SECTION 2. Hazards identification**2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
Eye irritation, Category 2, H319
Skin irritation, Category 2, H315
Specific target organ toxicity - repeated exposure, Category 1, Oral, thyroid, H372
Specific target organ toxicity - single exposure, Category 3, Inhalation, Respiratory system, H335
Acute aquatic toxicity, Category 1, H400

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

Classification (67/548/EEC or 1999/45/EC)

Xn	Harmful	R20/21
N	Dangerous for the environment	R50

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements**Labelling (REGULATION (EC) No 1272/2008)***Hazard pictograms*

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Product name Iodine sublimated for analysis EMSURE® ACS,ISO,Reag. Ph Eur

Signal word
Danger

Hazard statements

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 statements

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

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word
Danger

Hazard statements

H372 Causes damage to organs (thyroid) through prolonged or repeated exposure if swallowed.

Index-No. 053-001-00-3

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula I₂ (Hill)
Index-No. 053-001-00-3
EC-No. 231-442-4
Molar mass 253,8 g/mol

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical Name (Concentration)

CAS-No. Registration number Classification

Iodine (<= 100 %)

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

7553-56-2 01-2119485285-30-

XXXX

Acute toxicity, Category 4, H332

Acute toxicity, Category 4, H312

Eye irritation, Category 2, H319

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Skin irritation, Category 2, H315
Specific target organ toxicity - repeated exposure, Category 1, H372
Specific target organ toxicity - single exposure, Category 3, H335
Acute aquatic toxicity, Category 1, H400

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

Hazardous components (1999/45/EC)

Chemical Name (Concentration)

CAS-No.	Classification
Iodine (<= 100 %)	
7553-56-2	Xn, Harmful; R20/21 N, Dangerous for the environment; R50

For the full text of the R-phrases mentioned in this Section, see Section 16.

3.2 Mixture

not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, conjunctivitis, Asthma, bronchitis, Dermatitis, Skin disorders, Fever, bloody diarrhoea, collapse, rhinitis, metallic taste

4.3 Indication of any immediate medical attention and special treatment needed

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:
hydrogen iodide

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5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not empty into drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

7.3 Specific end use(s)

See exposure scenario in the Annex to this MSDS.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

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Derived No Effect Level (DNEL)

Worker DNEL, acute	Systemic effects	inhalation	1 mg/m ³
Worker DNEL, longterm	Systemic effects	inhalation	0,07 mg/m ³
Worker DNEL, acute	Systemic effects	dermal	0,01 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	dermal	0,01 mg/kg Body weight

Predicted No Effect Concentration (PNEC)

PNEC Fresh water	0,01813 mg/l
PNEC Marine water	0,06001 mg/l
PNEC Sewage treatment plant	11 mg/l
PNEC Fresh water sediment	3,99 mg/kg
PNEC Marine sediment	20,22 mg/kg
PNEC Soil	5,95 mg/kg

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

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).

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Other protective equipment
protective clothing

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter 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 empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	solid
Colour	dark violet
Odour	stinging
Odour Threshold	No information available.
pH	5,4 (saturated solution)
Melting point	114 °C
Boiling point/boiling range	185 °C at 1.013 hPa
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	0,41 hPa at 25 °C
Relative vapour density	8,8
Density	4,93 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	0,3 g/l at 20 °C

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Partition coefficient: n-octanol/water	log Pow: 2,49 (experimental) Bioaccumulation is not expected. (Lit.)
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	2,27 mPa.s at 116 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

Bulk density	ca.2.100 kg/m ³
Viscosity, kinematic	0,57 mm ² /s at 116 °C liquid

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

sublimable

10.3 Possibility of hazardous reactions

Risk of explosion with:

Reducing agents, Alkali metals, Acetylene, Ammonia, Potassium, copper compounds, sodium, oxyhalogenic compounds, Boron, halogen oxides, iodides, azides, ammonium compounds antimony, in powder form

mercury oxide, with, Methanol, and, ethanol

Risk of ignition or formation of inflammable gases or vapours with:

Powdered metals, Zinc, semimetals, halogen-halogen compounds, nonmetals, nonmetallic oxides, alkali salts, Iron, Fluorine, formaldehyde, hydrides, sodium phosphite, phosphorus, sulfur, Titanium, powdered aluminium, acetylidene, combustible substances, powdered magnesium, petrol, butadiene, CALCIUM HYDRIDE

Diethylether, with, Aluminium

Exothermic reaction with:

carbides, azides, turpentine oils and/or turpentine substitutes, alkali oxides, lithium silicide, alkaline earth compounds, nitrides, Acetaldehyde, Lithium, fluorides, Oxides of phosphorus, Chlorine

Iron, in powder form

10.4 Conditions to avoid

no information available

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10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 rat: 14.000 mg/kg (RTECS)

Symptoms: metallic taste, bloody diarrhoea, Circulatory collapse

Acute inhalation toxicity

LC50 rat: > 4,588 mg/l; 4 h ; dust/mist

OECD Test Guideline 403

absorption

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute dermal toxicity

LD50 rabbit: 1.425 mg/kg

US-EPA

absorption

Skin irritation

In vitro study

Result: non-corrosive

OECD Test Guideline 435

In vitro study

Result: Irritations

OECD Test Guideline 439

Causes skin irritation.

Possible damages: Dermatitis

Eye irritation

Causes serious eye irritation.

Sensitisation

In animal experiments: mouse

Result: negative

Method: OECD Test Guideline 429

Germ cell mutagenicity

Genotoxicity in vitro

Mutagenicity (mammal cell test):

Mouse lymphoma test

Result: negative

Method: OECD Test Guideline 476

UDS (Unscheduled DNA synthesis assay)

Result: negative

Method: OECD Test Guideline 482

Carcinogenicity

This information is not available.

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Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

Inhalation

Target Organs: Respiratory system

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Ingestion

Target Organs: thyroid

Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

rat

female

Oral

100 d

daily

NOAEL: 3 mg/l

LOAEL: 10 mg/l

OECD Test Guideline 408

Target Organs: thyroid

(as aqueous solution)

rat

male and female

Oral

29 - 47 d

daily

NOAEL: 10 mg/kg

OECD Test Guideline 422

Aspiration hazard

This information is not available.

11.2 Further information

Systemic effects:

After uptake:

Fever

Chronic intoxication:

Skin disorders, rhinitis, conjunctivitis, bronchitis, Asthma

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity

Toxicity to fish

||static test LC50 *Oncorhynchus mykiss* (rainbow trout): 1,67 mg/l; 96 h (ECHA)

Toxicity to daphnia and other aquatic invertebrates

||static test EC50 *Daphnia magna* (Water flea): 0,55 mg/l; 48 h (ECHA)

Toxicity to algae

Growth inhibition ErC50 *Desmodesmus subspicatus* (green algae): 0,13 mg/l; 72 h

OECD Test Guideline 201

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Growth inhibition NOEC *Desmodesmus subspicatus* (green algae): 0,025 mg/l; 72 h
OECD Test Guideline 201

Toxicity to bacteria

EC50 activated sludge: 280 mg/l; 3 h
OECD Test Guideline 209

12.2 Persistence and degradability

Biodegradability

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

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2,49

(experimental)

Bioaccumulation is not expected. (Lit.)

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

12.6 Other adverse effects

Additional ecological information

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number UN 3495

14.2 Proper shipping name IODINE

14.3 Class 8 (6.1)

14.4 Packing group III

14.5 Environmentally hazardous yes

14.6 Special precautions for user yes

Tunnel restriction code E

Inland waterway transport (ADN)

Not relevant

Air transport (IATA)

14.1 UN number UN 3495

14.2 Proper shipping name IODINE

14.3 Class 8 (6.1)

14.4 Packing group III

14.5 Environmentally hazardous yes

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14.6 Special precautions for user no

Sea transport (IMDG)

14.1 UN number UN 3495

14.2 Proper shipping name IODINE

14.3 Class 8 (6.1)

14.4 Packing group III

14.5 Environmentally hazardous yes

14.6 Special precautions for user yes

EmS F-A S-B

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard Legislation 96/82/EC
Dangerous for the environment
9a
Quantity 1: 100 t
Quantity 2: 200 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Regulation (EC) No 689/2008 concerning the export and import of dangerous chemicals not regulated

Substances of very high concern (SVHC) 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 $\geq 0.1\%$ (w/w).

National legislation

Storage class 6.1 D

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

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SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

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 through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.

Full text of R-phrases referred to under sections 2 and 3

R20/21	Harmful by inhalation and in contact with skin.
R50	Very toxic to aquatic organisms.

Training advice

Provide adequate information, instruction and training for operators.

Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

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 through prolonged or repeated exposure if swallowed.
H372 Causes damage to organs (thyroid) through prolonged or repeated exposure if swallowed.
H400 Very toxic to aquatic life.

Precautionary statements

Prevention

P273 Avoid release to the environment.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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.

Labelling (67/548/EEC or 1999/45/EC)

<i>Symbol(s)</i>	Xn	Harmful
	N	Dangerous for the environment

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R-phrase(s) 20/21-50 Harmful by inhalation and in contact with skin. Very toxic to aquatic organisms.

S-phrase(s) 23-25-61 Do not breathe vapour. Avoid contact with eyes. Avoid release to the environment. Refer to special instructions/ Safety data sheets.

EC-No. 231-442-4 EC Label

Reduced labelling (≤125 ml)

Symbol(s)  Xn

 N

R-phrase(s) 20/21

Harmful
Dangerous for the environment
Harmful by inhalation and in contact with skin.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.

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EXPOSURE SCENARIO 1 (Industrial use)

1. Industrial use (Reagent for analysis)

Sectors of end-use

SU 3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 9 Manufacture of fine chemicals
SU 10 Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

Chemical product category

PC21 Laboratory chemicals

Process categories

PROC1 Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC8a Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
PROC8b Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC15 Use as laboratory reagent

Environmental Release Categories

ERC2 Formulation of preparations
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC2

Product characteristics

Concentration of the Substance in Mixture/Article Limit the substance content in the mixture to 50 %.

Amount used

Annual amount per site 30 t
Daily amount per site 100 kg
Daily amount per site (Msafe) 100 kg

Environment factors not influenced by risk management

Flow rate 18.000 m³/d
Dilution Factor (River) 10
Dilution Factor (Coastal Areas) 100

Other given operational conditions affecting environmental exposure

Number of emission days per year 300
Emission or Release Factor: Air 0,1 %
Emission or Release Factor: Water 0,3 %

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Emission or Release Factor: Soil 0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant none

2.2 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site 200 t
Daily amount per site 667 kg

Daily amount per site (Msafe) 667 kg

Environment factors not influenced by risk management

Flow rate 18.000 m³/d
Dilution Factor (River) 10
Dilution Factor (Coastal Areas) 100

Other given operational conditions affecting environmental exposure

Number of emission days per year 300
Emission or Release Factor: Air 0 %
Emission or Release Factor: Water 0,05 %
Emission or Release Factor: Soil 0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant none

2.3 Contributing scenario controlling worker exposure for: PROC1

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use) Solid, low dustiness

Frequency and duration of use

Frequency of use 8 hours/day

Human factors not influenced by risk management

Skin Absorption 1 %

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.

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2.4 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use) Solid, low dustiness

Frequency and duration of use

Frequency of use 8 hours/day

Human factors not influenced by risk management

Skin Absorption 1 %

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor with local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2	100 kg/day	Fresh water	1	EUSES
2.2	ERC6a	667 kg/day	Fresh water	1	EUSES

Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.3	PROC1	longterm, inhalative, systemic	0,14	ECETOC TRA, modified
		longterm, dermal, systemic	< 0,01	ECETOC TRA, modified
		longterm, combined, systemic	0,15	

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2.4	PROC2	longterm, inhalative, systemic	0,01	ECETOC TRA, modified
		longterm, dermal, systemic	0,03	ECETOC TRA, modified
		longterm, combined, systemic	0,04	
2.4	PROC3	longterm, inhalative, systemic	0,14	ECETOC TRA, modified
		longterm, dermal, systemic	0,01	ECETOC TRA, modified
		longterm, combined, systemic	0,16	
2.4	PROC4	longterm, inhalative, systemic	0,71	ECETOC TRA, modified
		longterm, dermal, systemic	0,14	ECETOC TRA, modified
		longterm, combined, systemic	0,85	
2.4	PROC5	longterm, inhalative, systemic	0,71	ECETOC TRA, modified
		longterm, dermal, systemic	0,27	ECETOC TRA, modified
		longterm, combined, systemic	0,99	
2.4	PROC8a	longterm, inhalative, systemic	0,71	ECETOC TRA, modified
		longterm, dermal, systemic	0,27	ECETOC TRA, modified
		longterm, combined, systemic	0,99	
2.4	PROC8b	longterm, inhalative, systemic	0,07	ECETOC TRA, modified
		longterm, dermal, systemic	0,14	ECETOC TRA, modified
		longterm, combined, systemic	0,21	
2.4	PROC9	longterm, inhalative, systemic	0,14	ECETOC TRA, modified
		longterm, dermal, systemic	0,14	ECETOC TRA, modified
		longterm, combined, systemic	0,28	
2.4	PROC15	longterm, inhalative, systemic	0,14	ECETOC TRA, modified
		longterm, dermal, systemic	< 0,01	ECETOC TRA, modified
		longterm, combined, systemic	0,15	

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool SciDeEx® at www.merck-chemicals.com.

SAFETY DATA SHEET – Annex
according to Regulation (EC) No. 1907/2006

Catalogue No. 104761
Product name Iodine sublimated for analysis EMSURE® ACS,ISO,Reag. Ph Eur

EXPOSURE SCENARIO 2 (Professional use)

1. Professional use (Reagent for analysis)

Sectors of end-use

SU 22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Chemical product category

PC21 Laboratory chemicals

Process categories

PROC15 Use as laboratory reagent

Environmental Release Categories

ERC2 Formulation of preparations

ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)

2. Contributing scenarios: Operational conditions and risk management measures

2.1 Contributing scenario controlling environmental exposure for: ERC2

Product characteristics

Concentration of the Substance in Mixture/Article Limit the substance content in the mixture to 50 %.

Amount used

Annual amount per site 30 t
Daily amount per site 100 kg

Daily amount per site (Msafe) 100 kg

Environment factors not influenced by risk management

Flow rate 18.000 m³/d
Dilution Factor (River) 10
Dilution Factor (Coastal Areas) 100

Other given operational conditions affecting environmental exposure

Number of emission days per year 300
Emission or Release Factor: Air 0,1 %
Emission or Release Factor: Water 0,3 %
Emission or Release Factor: Soil 0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant none

2.2 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site 200 t
Daily amount per site 667 kg

Daily amount per site (Msafe) 667 kg

Environment factors not influenced by risk management

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Flow rate 18.000 m3/d
Dilution Factor (River) 10
Dilution Factor (Coastal Areas) 100

Other given operational conditions affecting environmental exposure

Number of emission days per year 300
Emission or Release Factor: Air 0 %
Emission or Release Factor: Water 0,05 %
Emission or Release Factor: Soil 0,01 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant none

2.3 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 %.
Physical Form (at time of use) Solid, low dustiness

Frequency and duration of use

Frequency of use 8 hours/day

Human factors not influenced by risk management

Skin Absorption 1 %

Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor without local exhaust ventilation (LEV), Indoor with local exhaust ventilation (LEV)

Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Additional good practice advice Use suitable eye protection. Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation and reference to its source

Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2	100 kg/day	Fresh water	1	EUSES
2.2	ERC6a	667 kg/day	Fresh water	1	EUSES

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Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.3	PROC15	longterm, inhalative, systemic	0,29	ECETOC TRA, modified
		longterm, dermal, systemic	0,01	ECETOC TRA, modified
		longterm, combined, systemic	0,30	

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

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