

SAFETY DATA SHEET



Revision date: 14-Jul-2021

Revision Number 3

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name IODINE
Product Code(s) 000000014561

Other means of identification

UN number 3495
CAS No. 7553-56-2
Pure substance/mixture Substance

Recommended use of the chemical and restrictions on use

Recommended use General chemical.
Uses advised against No information available.

Supplier

Ixom Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3

Specific target organ toxicity (repeated exposure)	Category 1
Acute aquatic toxicity	Category 1

SIGNAL WORD

Danger

Label elements

Corrosion
Skull and crossbones
Health hazard
Exclamation mark
Environment



Hazard statements

H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H332 - Harmful 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

The following health/environmental hazard categories fall outside the scope of the Workplace Health and Safety Regulations:

H400 - Very toxic to aquatic life

Precautionary Statements - Prevention

Avoid breathing dust / fume / gas / mist / vapours / spray
Do not eat, drink or smoke when using this product
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves / protective clothing / eye protection / face protection
Avoid release to the environment
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

Specific treatment (see First aid on this SDS)
Call a POISON CENTER or doctor/physician if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Collect spillage

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification

Poisons Schedule (SUSMP) 6

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Chemical name	CAS No.	Weight-%
Iodine	7553-56-2	60-100%

4. FIRST AID MEASURES

Description of first aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, (trained personnel should) give oxygen. Seek immediate medical attention/advice.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. This material can be absorbed through the skin with resultant toxic effects. Get medical attention immediately if symptoms occur.
Ingestion	Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

Most important symptoms and effects, both acute and delayed

Symptoms	Irritation. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.
-----------------	--

Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
---------------------------	------------------------

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media	Fine water spray. Foam. Dry chemical or CO ₂ .
-------------------------------------	---

Unsuitable extinguishing media	No information available.
---------------------------------------	---------------------------

Specific hazards arising from the chemical

Specific hazards arising from the chemical	Non-combustible. Substance itself does not burn but may decomposes upon heating to produce corrosive/toxic fumes, including those of iodine and hydrogen iodide. Avoid generation of dust. In the event of fire, cool tanks with water spray. Environmentally hazardous. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
---	--

Hazardous combustion products	Iodine vapours.
--------------------------------------	-----------------

Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
Hazchem code	2WE

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid breathing dust / fume / gas / mist / vapours / spray. Ensure adequate ventilation. Do not touch or walk through spilled material. Keep people away from and upwind of spill/leak. Avoid generation of dust. Evacuate personnel to safe areas. Wash thoroughly after handling. Use personal protective equipment as required.
Other information	Ventilate the area. Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Shut off ignition sources. Clear area of all unprotected personnel. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not allow to enter into soil/subsoil. Prevent product from entering drains. See Section 12 for additional Ecological Information.
----------------------------------	--

Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Remove ignition sources. Provide adequate ventilation. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Methods for cleaning up	Use appropriate personal protective equipment (PPE). Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Neutralise with lime or soda ash.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Avoid contact with skin, eyes, and clothing. Avoid breathing dust or spray mist. Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take off contaminated clothing and wash before reuse. Wash thoroughly after handling. Use personal protection equipment. Handle in accordance with good industrial hygiene and safety practice. Use according to package label instructions. Keep out of reach of children.
General hygiene considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store locked up. Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from foodstuffs and sources of heat or ignition. Protect from sunlight. Store away from incompatible materials described in Section 10. Keep container closed when not in use. This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.
---------------------------	---

Packaging materials Avoid: Metal, steel, iron and zinc materials.(1).

Incompatible materials Ammonia, sulfur, sodium, phosphorus, acetylene, ammonium hydroxide, powdered metals and strong reducing metals/agents.

Poisons Schedule (SUSMP) 6

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name	Australia	ACGIH TLV
Iodine 7553-56-2	0.1 ppm Peak 1 mg/m ³ Peak	

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

Peak Limitation - a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas. Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.



Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear suitable protective clothing. Overalls. Apron. Boots.

Hand protection	Impervious gloves.
Respiratory protection	If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Environmental exposure controls	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Prills Crystals
Color	Grey Metallic Violet - Black
Odor	Irritating , Pungent
Odor threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5.4 (saturated solution)	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	114 °C	None known
Boiling point / boiling range	184 °C	None known
Flash point	Not Applicable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	Not Applicable	
Lower flammability or explosive limits	Not Applicable	
Vapor pressure	0.4 hPa @20 °C	None known
Vapor density	8.8	None known
Relative density	4.9	None known
Water solubility	0.03 g/100ml	None known
Solubility(ies)	Insoluble in water Sinks in water. Soluble in ethanol, ether, chloroform, tetrachloromethane, methanol, carbondisulfide.	None known
Partition coefficient	2.49 (experimental value)	None known
Autoignition temperature	Not Applicable	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	Not Applicable	None known
Dynamic viscosity	0.0022 Pa.s @ 116 °C	None known

Other information

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Reacts with incompatible materials shown below.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions May react violently or explosively with ammonium hydroxide, acetaldehyde and acetylene. (2).

Conditions to avoid

Conditions to avoid Heat, flames and sparks. Avoid contact with combustible substances. Dust formation. Direct sunlight. Do not contaminate food or feed stuffs.

Incompatible materials

Incompatible materials Ammonia, sulfur, sodium, phosphorus, acetylene, ammonium hydroxide, powdered metals and strong reducing metals/agents.

Hazardous decomposition products

Hazardous decomposition products Iodine vapours. Hydrogen iodide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation Harmful by inhalation. May cause irritation of respiratory tract.

Eye contact Causes serious eye irritation.

Skin contact Causes skin irritation. Harmful in contact with skin. May be absorbed through the skin in harmful amounts.

Ingestion Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

Symptoms Irritation. May cause redness and tearing of the eyes. Coughing and/ or wheezing. Difficulty in breathing.

Numerical measures of toxicity - Product Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Iodine	= 14 000 mg/kg (Rat) ATE CA (oral)= 500 mg/kg bodyweight (1)	= 1425 mg/kg (Rabbit)bodyweight (1)	> 4.588 mg/l/4h (Rat, dust/mist) ATE CA (dust,mist)=1.5 mg/l/4h (1)

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes skin irritation. pH: 5.4 (1).

Serious eye damage/eye irritation	Causes serious eye irritation. pH: 5.4 (1).
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	No information available.
Chronic effects:	Chronic over-exposure can lead to iodism, a mild toxic syndrome, with symptoms of salivation, nasal discharge, sneezing, conjunctivitis, fever, laryngitis, bronchitis, stomatitis and various skin rashes. Long-term high level exposure will cause a reversible reduction in thyroid function. (2)

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Avoid contaminating waterways. Very toxic to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Iodine	ErC50: 0.13 mg/l (algae)	LC50: =0.164 mg/l (LC50; 96 h)	-	EC50 =0.55 mg/l (Daphnia)

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation This chemical shows a low bioaccumulation potential. BCF= 0.027. (1).

Component Information

Chemical name	Partition coefficient
Iodine	2.49 (Experimental value)(1)

Mobility

Mobility in soil No information available.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADG

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN number	3495
Proper shipping name	IODINE
Hazard class	8
Subsidiary hazard class	6.1
Packing group	III
Environmental hazard	Yes
Special Provisions	279
Hazchem code	2WE

IATA

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number	3495
UN proper shipping name	IODINE
Transport hazard class(es)	8
Subsidiary hazard class	6.1
Packing group	III

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number	3495
UN proper shipping name	IODINE
Transport hazard class(es)	8
Subsidiary hazard class	6.1
Packing group	III
IMDG EMS Fire	F-A
IMDG EMS Spill	S-B
Marine pollutant	Yes

15. REGULATORY INFORMATION

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

National regulations

Australia

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)
Poisons Schedule (SUSMP) 6

International Inventories

AIIC This material is listed on the Australian Inventory of Industrial Chemicals.

Legend:

AIIC AIIC- Australian Inventory of Industrial Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

- (1) Supplier Safety Data Sheet 03/ 2018
(2) Bronson & Jacobs Safety Data Sheet 12/ 2016

Reason(s) For Issue: Revised Primary SDS

Issuing Date: 14-Jul-2021

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set

RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet