

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

GHS Product identifier: Strong Iodine Solution
Other means of identification: None allocated
Recommended use of the product and restrictions on use: General antiseptic, disinfectant.
Supplier's Details: Pharmacem Australia Pty Ltd
Unit 6, 70 Fison Ave West
Eagle Farm QLD 4009
Telephone: (07) 3868 0333

Emergency phone number: **13 11 26 (Poisons Information Hotline)**

SECTION 2 HAZARDS IDENTIFICATION

Classification of Product:

This product is classified as a physical hazard (flammable liquid), a health hazard, and an environmental hazard in accordance with the following classification criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Eighth Revised Edition. It is also classified as dangerous goods under Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code).

Physical Hazard:

Flammable liquid: Category 2

GHS label elements, including precautionary statements:

Pictogram:



Signal word: Danger

Hazard statements: Highly flammable liquid and vapour

Precautionary statements:

Prevention: Keep away from heat, sparks, open flames, hot surfaces. No smoking.

Keep container tightly closed

Keep cool

Ground container and receiving equipment

Use explosion proof electrical/ventilating/lighting equipment

Use only non-sparking tools

Take precautionary measures against static discharge.

Response: If on skin rinse skin with water

Take off immediately all contaminated clothing

In case of fire use water fog, dry chemical, foam, or carbon dioxide to extinguish

Health hazards: Causes skin irritation, causes eye irritation, specific target organ systemic toxicity (Repeated exposure) – category 2 (thyroid)

Specific target organism toxicity following

repeated exposure: Category 2

GHS label elements, including precautionary statements:

Pictogram:



Signal word: Warning
 Hazard statement: May cause damage to the thyroid through prolonged or repeated exposure
 Precautionary statements:
 Prevention: Do not breathe vapours.
 Wash exposed parts thoroughly after handling.
 Do not eat, drink or smoke when using this product
 Response: Get medical advice / attention if you feel unwell.

Skin irritant Category 2

GHS label elements, including precautionary statements:
 Pictogram:



Signal word: Warning
 Hazard statements: Causes skin irritation
 Precautionary statements:
 Prevention: Keep out of reach of children
 Wear suitable protective clothing and gloves
 Do not eat drink or smoke when using this product
 Wash hands thoroughly after handling
 Response: If on skin wash with plenty of soap and water
 If skin irritation occurs get medical advice/attention

Eye corrosion/irritant Category 2

GHS label elements, including precautionary statements:
 Pictogram:



Signal word: Danger
 Hazard statements: Causes serious eye damage
 Precautionary statements:
 Prevention: Avoid contact with eyes. Wear safety glasses / goggles
 Wash hands thoroughly after handling
 Response: If in eyes rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Get medical advice.

Aquatic hazard:

Acute aquatic toxicity Category 1

GHS label elements, including precautionary statements:

Pictogram:



Signal word: Warning
 Hazard statements: Very toxic to aquatic life
 Precautionary statements:
 Prevention: Read label before use.
 Avoid release to the environment.
 Response: Collect spillage

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Cas No.	Proportion
Iodine	7553-56-2	10%
Potassium Iodide BP	7681-11-0	5%
Denatured Ethanol	64-17-5	QS 100%

SECTION 4 FIRST AID MEASURES

The following First Aid directions have been set by the Therapeutic Goods Administration (TGA) of the Commonwealth Department of Health and appear in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP):

For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor at once. If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes. If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

SECTION 5 FIRE FIGHTING MEASURES

Suitable extinguishing media	Use alcohol foam, dry chemical or carbon dioxide. (Water may be ineffective).
Hazards from combustion products:	Vapours may flow along surfaces to distant ignition sources and flash back. Closed containers exposed to heat may explode. Contact with strong oxidisers may cause fire.
Special protective precautions and equipment for fire fighters:	Firefighters should wear proper protective equipment and self-contained (positive pressure if available) breathing apparatus with full facepiece. Move exposed containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Emergency procedures:	Do not breathe vapour or fumes. Avoid direct contact with skin, eyes and clothing. Wear suitable protective clothing. Eliminate all sources of ignition. Ventilate area well to dispel residual vapour or fumes.
Methods and materials for containment and clean up:	Use water spray to reduce vapours. Absorb with sand or other non-combustible absorbent material and place into container for later disposal. Flush area with water. Do not allow wash water to contaminate soil, drains or surface water.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling:	Avoid prolonged or repeated skin contact. Avoid eye contact. Avoid breathing vapour. Bond and ground containers when transferring liquid. Keep container tightly closed.
Conditions for safe storage, including any incompatibilities:	Store in a cool, dry, well- ventilated, flammable liquid storage area. Avoid direct sunlight.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

National exposure standards:	
TWA ¹ (Iodine, ppm)	0.1 (Peak limitation ²)
TWA ¹ (Iodine, mg/m ³)	1 (Peak limitation ²)
TWA ¹ (Ethanol, ppm)	1000
TWA ¹ (Ethanol, mg/m ³)	1880
Biological limit values:	None allocated
Engineering controls:	Local exhaust and / or mechanical (general) exhaust is recommended, provided these are fitted with flame and explosion proof electrical fittings.
Personal protective equipment:	
Respiratory:	None should be needed under normal circumstances. At concentrations of iodine above 1 ppm, self-contained breathing apparatus is advised.
Eye protection	Safety glasses with side-shields and rubber gloves are recommended.
Skin protection:	Use good industrial hygiene and avoid all unnecessary contact. PVC or Neoprene gloves may be used.

¹ TWA - time weighted average exposure standard (TWA) means the average airborne concentration of a substance over an eight-hour working day, for a five-day working week.

² Peak limitation - maximum or peak airborne concentration of a substance determined over the shortest analytically practicable period of time.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Red/Brown Liquid
Boiling Point	>78.3°C
Vapour Pressure	5.810 kPa @ 20°C
Flash Point	13°C
Percent Volatile by Volume	85%
Solubility in Water	Slight water solubility

SECTION 10 STABILITY AND REACTIVITY

Chemical stability:	Stable
Conditions to avoid:	Heat, flame, sources of ignition.
Incompatible materials:	Strong oxidizing agents, metals such as copper, iron and aluminium.
Hazardous decomposition products:	Iodine
Hazardous reactions:	None known

SECTION 11 TOXICOLOGICAL INFORMATION

Strong iodine solution (Lugol's solution) is used in the treatment of many conditions in which the action of iodine ion is desired such as thyrotoxicosis, keratoscleritis, keratitis associated with excessive keratin.

Routes of Exposure:

Iodine solution can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion. The major routes of exposure are expected to be eye and skin contact. There are no toxicology data available for Strong Iodine Solution. Information has been provided for iodine.

Signs and symptoms of exposure:

Irritation of eyes, skin, nose; lacrimation (discharge of tears); headache; chest tightness; skin burns, rash; cutaneous hypersensitivity.

Summary of Toxicology:

Main risks and target organs:

Concentrated iodine is corrosive. Main risks in acute exposure to high iodine concentrations are largely due to the highly corrosive effect of iodine on the entire gastrointestinal tract and resultant shock. If rupture occurs mediastinitis or peritonitis develop. Target organs are mucous membranes of pharynx, larynx and oesophagus for the concentrated iodine, and thyroid for the diluted form as a systemic effect. Iodine is not a frequent cause of toxicity in the amounts available in the household.

Summary of clinical effects:

Ingestion of iodine may cause corrosive effects such as oedema of the glottis, with asphyxia, aspiration pneumonia, pulmonary oedema and shock, as well as vomiting and bloody diarrhea. The CNS, cardiovascular and renal toxicity following acute iodine ingestion appear to be due to the corrosive gastroenteritis and resultant shock. Vomiting, hypotension and circulatory collapse may be noted following severe intoxication.

Acute toxicity:

Rabbit (LD50, oral)	10 gm/kg (10000 mg/kg)
Rat (LD50, subcutaneous)	10500 mg/kg (10500 mg/kg)
Mouse (LD50, oral)	22 gm/kg (22000 mg/kg)
Mouse (LD50, subcutaneous)	>8650 mg/kg (8650 mg/kg)
Dog (LD50, oral)	800 mg/kg (800 mg/kg)
Dog (LD50, intravenous)	40 mg/kg (40 mg/kg)

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity:

Toxic to fish:

Species:	<i>Oncorhynchus mykiss</i> , Rainbow trout, Donaldson trout
Type of exposure:	Static
Duration:	96 hr
LC ₅₀ MOR:	530, 480 - 580 ug/L (= 0.53 mg/l)

Toxic to crustaceans

Species:	<i>Daphnia magna</i> , Water flea
Type of exposure:	Static
Duration:	48 hr
LC ₅₀ MOR:	160, 140 - 190 ug/L (= 0.16 mg/l)

Persistence and degradability:

Biocumulative: No

Mobility:
log Kow= 2.49

Environmental precautions:
Avoid release into the environment. Very toxic to the aquatic environment.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal methods and containers: Dispose of containers and unused chemical in accordance with instructions obtained from local municipal authority.
Do not contaminate soils, drains or surface water.

Special precautions for landfill or incineration: Do not burn empty containers or unused product.

SECTION 14 TRANSPORT INFORMATION

UN Number:	1293
UN Proper Shipping Name:	Tinctures, medicinal
Class and subsidiary risk:	3 (No subsidiary risk allocated)
Packing Group:	III
Special precautions for user	None known
Hazchem Code:	2[Y]E

SECTION 15 REGULATORY INFORMATION

Products containing iodine at the concentration present in this product are classified as Schedule 6 poisons in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

The following ingredients are listed in the Australian Inventory of Chemical Substances (AICS), and have been assessed under the Australian Industrial Chemicals Introduction Scheme (AICIS):

Iodine	7553-56-2
Potassium Iodide BP	7681-11-0
Denatured Ethanol	64-17-5

Iodine and potassium iodide have been assessed under a Human health tier I assessment and ethanol has been assessed under a Human health tier II assessment.

Chemicals assessed under the Human health tier I assessment are not considered to pose an unreasonable risk to the health of workers and public health. The Tier I assessment takes into account both the intrinsic hazard of the chemical and potential human exposure. Where hazardous chemicals are included in the Human health tier I assessment, all requirements under workplace health and safety and poisons legislation as adopted by the relevant state or territory should be met to minimise risk.

In relation to ethanol, the Human health tier II assessment found that the risk to public health is not considered to be unreasonable and further risk management is not considered necessary for public safety.

SECTION 16 OTHER INFORMATION

References:

1. FAISD Handbook, Handbook of First Aid Instructions, Safety Directions, Warning Statements, and General Safety Precautions for, Agricultural and Veterinary Chemicals, (as updated), APVMA (Australian Pesticides and Veterinary Medicines Authority), <https://apvma.gov.au/node/26586>
2. Code of Practice – Preparation of safety data sheets for hazardous chemicals, Safe Work Australia, May 2018, <https://www.safeworkaustralia.gov.au/doc/model-code-practice-preparation-safety-data-sheets-hazardous-chemicals>
3. Australian Inventory of Industrial Chemicals (as updated), AICIS (Australian industrial Chemicals Introduction Scheme), Australian Government Department of Health, <https://www.industrialchemicals.gov.au/search-inventory>
4. APVMA Registrations and Permits, <https://apvma.gov.au/node/1060>
5. ADI [Acceptable Daily Intake] List (as updated), Commonwealth Department of Health, TGA (Therapeutic Goods Administration), https://apvma.gov.au/sites/default/files/publication/74511-acceptable_daily_intakes_adi_for_agricultural_and_veterinary_chemicals_used_in_food_producing_crops_or_animals_-_edition_4_2020.pdf
6. The Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code), Edition 7.7, 2020, https://www.ntc.gov.au/sites/default/files/assets/files/ADG%20Code%207.7_0.pdf
7. SUSMP (Standard for the Uniform Scheduling of Medicines and Poisons) (as updated), Chemicals and Medicines Scheduling Secretariat (MD122), Scheduling and Committee Governance, TGA, Commonwealth Department of Health, <https://www.tga.gov.au/publication/poisons-standard-susmp>
8. Hazardous Chemical Information System (HCIS), Safework Australia (as updated), <http://hcis.safeworkaustralia.gov.au/>
9. Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Eighth Revised Edition, United Nations, New York and Geneva, 2019, <https://unece.org/ghs-rev8-2019>
10. NIOSH Pocket Guide to Chemical Hazards
11. Chemical Classification and Information Database (CCID) (as updated), New Zealand Environmental Protection Authority, <http://www.epa.govt.nz/search-databases/Pages/HSNO-CCID.aspx>

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