





Substance	Hazard	Comment
Iodine <i>Solid</i>	  HARMFUL ENVIRONMENT	WARNING: harmful in contact with skin and if inhaled. Very toxic to aquatic life. It is easily vapourised if heated - the violet vapour is dangerous to the eyes. For a 15-minute exposure, the concentration in the atmosphere should not exceed 1.1 mg m^{-3} .
Iodine solution, in potassium iodide / water or in organic solvent <i>(if 1 M or more)</i>	  HARMFUL ENVIRONMENT	WARNING: harmful in contact with skin and if inhaled. Very toxic to aquatic life. Even dilute solutions will stain the skin. There may be hazards associated with the organic solvent; see relevant CLEAPSS <i>Student Safety Sheets</i> . Ethanol is often used; it is HIGHLY FLAMMABLE.
Dilute iodine solution, in potassium iodide / water or in organic solvent <i>(if less than 1 M)</i>	LOW HAZARD	Even dilute solutions will stain the skin. Solutions 0.01 to 0.1 M are suitable for many activities, eg testing for starch, work with enzymes, etc. There may be hazards associated with the organic solvent; see relevant CLEAPSS <i>Student Safety Sheets</i> . Ethanol is often used; it is HIGHLY FLAMMABLE. 'Tincture of iodine', used as a mild antiseptic, is a dilute solution in ethanol (about 0.1 M).

Typical control measures to reduce risk

- Use the lowest concentration and smallest volume possible.
- Wear eye protection for all but the most-dilute solutions.
- Handle iodine solid using forceps or wear protective gloves especially for larger amounts.
- Avoid breathing iodine vapour, eg, by using a fume cupboard.

Assessing the risks

- **What are the details of the activity to be undertaken? What are the hazards?**
- **What is the chance of something going wrong?**
- **How serious would it be if something did go wrong?**
NB Iodine can crystallise painfully on the eyeball.
- **How can the risk(s) be controlled for this activity?**
eg, can it be done safely? Does the procedure need to be altered? Should goggles or safety spectacles be worn?

Emergency action

- **In the eye** Flood the eye with gently-running tap water for 10 minutes. Consult a medic.
- **Vapour breathed in** Remove the casualty to fresh air. Consult a medic if breathing is even slightly affected.
- **Swallowed** Do no more than wash out the mouth with water. Do **not** induce vomiting. Consult a medic.
- **Spilt on the skin or clothing** Brush off solid iodine and immerse in sodium thiosulfate solution (20%, 1 M). Remove contaminated clothing, soak it and drench the skin with plenty of water. Consult a medic if a large area is affected or blistering occurs.
- **Spilt on the floor, bench, etc** Scoop up any solid iodine, add sodium thiosulfate solution (20%, 1 M) to the remaining spill and leave for 1 hour. Mop up and rinse with plenty of water.