



Canadian Nuclear Safety Commission

P.O. Box 1046, Station B
Ottawa, Canada
K1P 5S9

Tel: (613) 995-5894 Fax: (613) 995-5086
24 Hour Emergency Hotline: (613) 995-0479

Radiation Safety Data Sheet

This data sheet presents information on radioisotopes only.

For information on chemical compounds incorporating this radionuclide, see the relevant Material Safety Data Sheet.

Part 1 - RADIOACTIVE MATERIAL IDENTIFICATION

Chemical Symbol:	I	Common Names:	Iodine
Atomic Weight:	123	Atomic Number:	53

Part 2 - RADIATION CHARACTERISTICS

Physical Half-Life: 13.2 hours

CNSC Exemption Quantity (in Bq): 1×10^7 (10 MBq)

A CNSC license is not required if the amount of radioactive nuclides possessed is less than one Exemption Quantity.

Principal Emissions	Average Energy (MeV)**	Maximum Energy (MeV)***	Dose Rate at 1m Distance (mSv/h/GBq)	Recommended Shielding
Neutrons	-	-	-	-
Gamma & X-rays	0.1590	-	0.075	1 mm Pb
Beta*	-	-	-	-
Alpha	-	-	-	-

* Where beta radiation is present, bremsstrahlung radiation will be produced. Shielding may therefore be required.

** Average energy of most abundant emission.

*** Maximum of most abundant emission.

Progeny	Te-123(1E13 y), Te-123m(119.7 d)
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Part 3 - DETECTION AND MEASUREMENT

Method of Detection: Nal scintillation counter

Dosimetry:

External: TLD (whole body & skin) T Extremity T Neutron

Internal: Whole body Thorax Urine analysis T Other (specify) Thyroid

Part 4 - PREVENTATIVE MEASURES

Exposure to significant amounts of radioiodine increases risk of developing thyroid cancer. Iodine is toxic by ingestion and inhalation, and a strong irritant to eyes and skin. Iodine can be absorbed through the skin. Heating sodium iodide 123 capsules to decomposition may emit in radioactive fumes containing I -123.

Recommended protective clothing: Disposable plastic, latex, or rubber gloves. Wear a lab coat, which must be monitored before leaving the laboratory. Also wear safety glasses.

Keep handling time to a minimum. Syringe shields and tongs should be used. Consult CNSC license for requirements concerning engineering controls, protective equipment, and special storage requirements.

Part 5 - ANNUAL LIMIT ON INTAKE

	Ingestion	Inhalation
Compound Type	All compounds	All compounds
Annual Limit on Intake (Bq)	1×10^8	2×10^8

EMERGENCY PROCEDURES

The following is a guide for first responders. The following actions, including remediation, should be carried out by qualified individuals. In cases where life threatening injury has resulted, **first** treat the injury, **second** deal with personal decontamination.

Personal Decontamination Techniques

- C Wash well with soap and water and monitor skin
- C Do Not abrade skin, only blot dry
- C Decontamination of clothing and surfaces are covered under operating and emergency procedures

Spill and Leak Control

- C Alert everyone in the area
- C Confine the problem or emergency (includes the use of absorbent material)
- C Clear area
- C Summon Aid

Emergency Protective Equipment, Minimum Requirements

- C Gloves
- C Footwear Covers
- C Safety Glasses
- C Outer layer or easily removed protective clothing
- C Suitable respirator selected

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