



## Canadian Nuclear Safety Commission 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.

<b>Part 1 - RADIOACTIVE MATERIAL IDENTIFICATION</b>			
Chemical Symbol:	Ir	Common Names:	Iridium
Atomic Weight:	192	Atomic Number:	77

<b>Part 2 - RADIATION CHARACTERISTICS</b>
---

<b>Physical Half-Life:</b>	74.02 days
<b>Unconditional Clearance Levels:</b>	Activity Concentration (Bq/g)    1 x 10 <sup>0</sup>
<b>CNSC Exemption Quantity:</b>	Activity Concentration (Bq/g)    1 x 10 <sup>1</sup> Activity (Bq)                            1 x 10 <sup>4</sup>

Principal Emissions	Average Energy of Most Abundant Emission (MeV)	Maximum Energy of Most Abundant Emission (MeV)	Gamma-Ray Dose Rate at 1m Distance (mSv/h per GBq) <sup>1</sup>	Shielding Information <sup>2</sup>
Neutrons	-	-	-	-
Gamma & X-ray	0.3094	-	0.16	Half-value layer (lead): 3 mm
Beta* & Electron	0.2089	0.672	-	Total absorption: 1 mm glass or 1.9 mm plastic
Alpha	-	-	-	-

\* Where beta radiation is present, bremsstrahlung radiation will be produced. Shielding for bremsstrahlung radiation must be considered.

<sup>1</sup>Shleien, B. et al, Handbook of Health Physics and Radiological Health Third Edition, 1998.

<sup>2</sup>Delacroix, D. et al, Radionuclide and Radiation Protection Data Handbook 2002.

<b>Progeny</b>	
----------------	--

### Part 3 - DETECTION AND MEASUREMENT

#### Method of Detection:

Gamma probe (e.g., NaI scintillation counter)

Beta probe (e.g., thin-window Geiger-Mueller detector)

#### Dosimetry:

External: TLD (whole body & skin)  Extremity  Neutron

Internal: Whole body  Thyroid  Urine analysis  Other (specify) \_\_\_\_\_

### Part 4 - PREVENTATIVE MEASURES

Recommended protective clothing: No protective clothing is necessary for work with sealed sources. When working with unsealed sources wear appropriate protective clothing, such as laboratory coats, coveralls, gloves, and safety glasses/goggles. Wear a lab coat, which must be monitored before leaving the laboratory. Use a suitable mask if the radioactive material is in the form of a dust, powder or if it is potentially volatile. Use disposable absorbent liners on trays.

Always use the principles of time, distance and shielding to minimize dose.

Consult CNSC license for requirements concerning engineering controls, protective equipment, and special storage requirements.

### Part 5 - ANNUAL LIMIT ON INTAKE

Compound Type	Ingestion	Inhalation		
		Unspecified compounds	Halides, nitrates, metallic iridium	Oxides, hydroxides
Annual Limit on Intake (Bq)	$1.4 \times 10^7$	$9.1 \times 10^6$	$4.9 \times 10^6$	$4.1 \times 10^6$



## 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. In the case of an emergency, the Radiation Safety Officer should be contacted as soon as practicable.

### Personal Decontamination Techniques

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

### Spill and Leak Control

- Alert everyone in the area
- Clear area
- Summon Aid

### Emergency Protective Equipment, Minimum Requirements

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

**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

Revision number: 1

Date of revision: 19 September 2011