

## Radionuclide Safety Data Sheet

<b>Sr-90</b>	<b>Radionuclide:</b>	<b>Strontium-90</b>			<b>Half-life</b>
	<b>Atomic Number</b>	<b>38</b>	<b>Atomic Weight</b>	<b>90</b>	<b>28.6 years</b>
<b>Annual Limit on Intake (Bq)</b>					
<b>Ingestion</b>		All compounds: 1.1E+06			
<b>Inhalation</b>		All compounds: 7.4E+05			
<b>Radiation Characteristics</b>					
<b>Principal Emissions</b>	<b>Maximum Energy (MeV)</b>	<b>Dose Rate at 1 m Distance (mSv/h/GBq)</b>		<b>Recommended Shielding</b>	
<b>Beta</b>	2.3	9.65		10 mm Plexiglas	
<b>Range of beta particle (cm)</b>		<b>Air</b>	<b>Water/tissue</b>	<b>Plastic</b>	
		1045	1.14	0.99	
<b>Detection and Measurement</b>					
Method of detection:		<u>Thin window G-M detector.</u>			
Dosimetry:		External: <u>Skin and extremity</u>			
<b>Protective Measures</b>					
<p><b>Critical organs:</b> Bone, lung (inhalation)</p> <p><b>Exposure routes:</b> Ingestion, inhalation, puncture, wound, skin contamination/absorption</p> <p><b>Recommended protective clothing:</b> Disposable rubber gloves, lab coat, gloves and safety glasses when handling unsealed sources</p> <p>Use tools to indirectly handle unshielded sources and potentially contaminated vessels. Avoid direct hand contact</p>					
<b>Sources and application of Sr-90</b>					
<p>Strontium-90 is used as a radioactive tracer in medical and agricultural studies. The heat generated by strontium-90's radioactive decay can be converted to electricity for long-lived, light-weight power supplies. These are often used in remote locations, such as in navigational beacons, weather stations, and space vehicles. Strontium-90 is also used in electron tubes, as a radiation source in industrial thickness gauges, and for the treatment of eye diseases. Controlled amounts of strontium-90 have been used as a treatment for bone cancer</p>					