**RADIOISOTOPE BRIEF**

**Strontium-90 (Sr-90)**

**Half-life:** 29.1 years  
**Mode of decay:** Beta radiation  
**Chemical properties:** Chemically reactive; can create halide, oxide, and sulfide compounds

**What is it used for?**

Because Sr-90 generates heat as it decays, it is used as a power source for space vehicles, remote weather stations, and navigational beacons. It is also used in industrial gauges and medically, in a controlled manner, to treat bone tumors.

**Where does it come from?**

Sr-90 is produced commercially through nuclear fission for use in medicine and industry. It is also found in the environment from nuclear testing that occurred in the 1950s and 1960s and in nuclear reactor waste and can contaminate reactor parts and fluids.

**What form is it in?**

Sr-90 is a soft metal. It can be present in dust from nuclear fission after detonation of nuclear weapons or a nuclear power plant accident.

**What does it look like?**

In its pure form, Sr-90 is a soft, shiny silver metal, but it quickly changes to yellow when exposed to air.

**How can it hurt me?**

Sr-90 can be inhaled, but ingestion in food and water is the greatest health concern. Once in the body, Sr-90 acts like calcium and is readily incorporated into bones and teeth, where it can cause cancers of the bone, bone marrow, and soft tissues around the bone.

Sr-90 decays to yttrium 90 (Y-90), which in turn decays by beta radiation so that wherever Sr-90 is present Y-90 is also present. Because of the beta radiation, Y-90 poses a risk of burns to the eyes and on the skin from external exposure.

For more information on Sr-90, see the Public Health Statement by the Agency for Toxic Substances and Disease Registry at [http://www.atsdr.cdc.gov/toxprofiles/phs149.html](http://www.atsdr.cdc.gov/toxprofiles/phs149.html), or visit the Environmental Protection Agency at [http://www.epa.gov/radiation/radionuclides/strontium.htm](http://www.epa.gov/radiation/radionuclides/strontium.htm).

The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.

For more information, visit www.bt.cdc.gov/radiation, or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).