

#### 4. PRODUCTION, IMPORT, USE, AND DISPOSAL

##### 4.1 PRODUCTION

Between 1913 and 1920, about 70 g of radium were produced by Pittsburgh refineries (Blaufox 1988). No current information on production of radium has been located.

##### 4.2 IMPORT

No current information has been located on the importation of radium. In the late 1970's, Zaire and Canada were the world's principal producers of radium (HSDB 1988). No quantitative data regarding U.S. imports of radium from those countries have been located.

##### 4.3 USE

Radium has been used as a radiation source for treating neoplastic diseases, as a radon source, in radiography of metals, and as a neutron source for research (Weast 1985; Windholz 1983).

Until the 1960s, radium was a component of the luminous paints used for watch and clock dials, instrument panels in airplanes, military instruments, and compasses (Blaufox 1988).

During the early years of this century, radium was used in potions with supposed curative properties. This practice was discontinued by the early 1930's (Blaufox 1988; Macklis 1990).

##### 4.4 DISPOSAL

Because radium is a radioactive substance, disposal of wastes containing radium is controlled by a number of federal and state regulations (see Chapter 7). Both the EPA and the Nuclear Regulatory Commission have promulgated regulations for land disposal of these wastes detailing containment requirements and permissible exposure levels based on radioactivity.

On a global level, the amount of radium released to the environment OK disposed of through industrial use is considered to be insignificant compared to the natural occurrence of radium in the environment. Radium is present in the wastes of uranium mining and refining processes, and disposal of these wastes is regulated.

