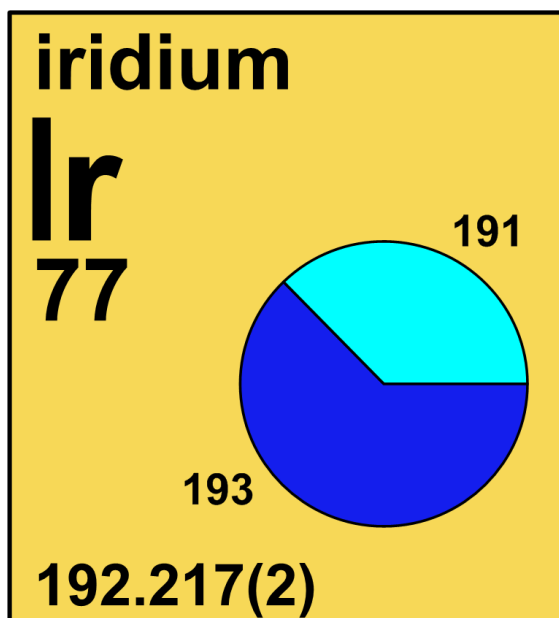


4.77 iridium

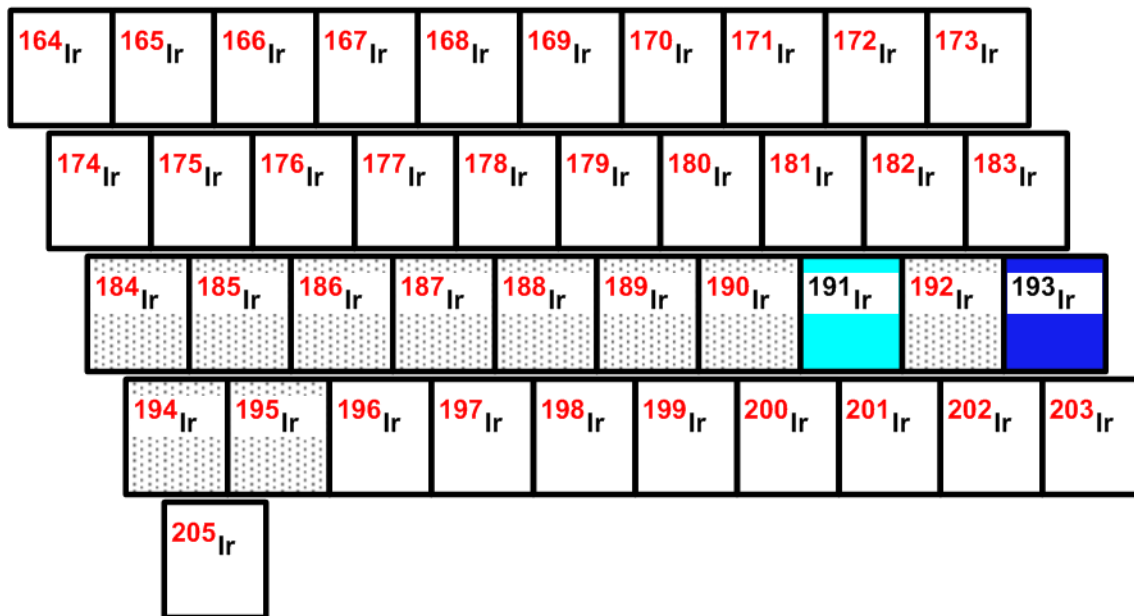


Stable isotope	Relative atomic mass	Mole fraction
^{191}Ir	190.960 59	0.373
^{193}Ir	192.962 92	0.627

Half-life of radioactive isotope

Less than 1 hour

Between 1 hour and 1 year



4.77.1 Iridium isotopes in industry

Metallic ^{192}Ir (with a **half-life** of 74 days) is used as a radiation source in **gamma cameras** for non-destructive testing of products for manufacturing flaws, such as aircraft parts, boilers, and pipeline welds (Figure 4.77.1) [271].

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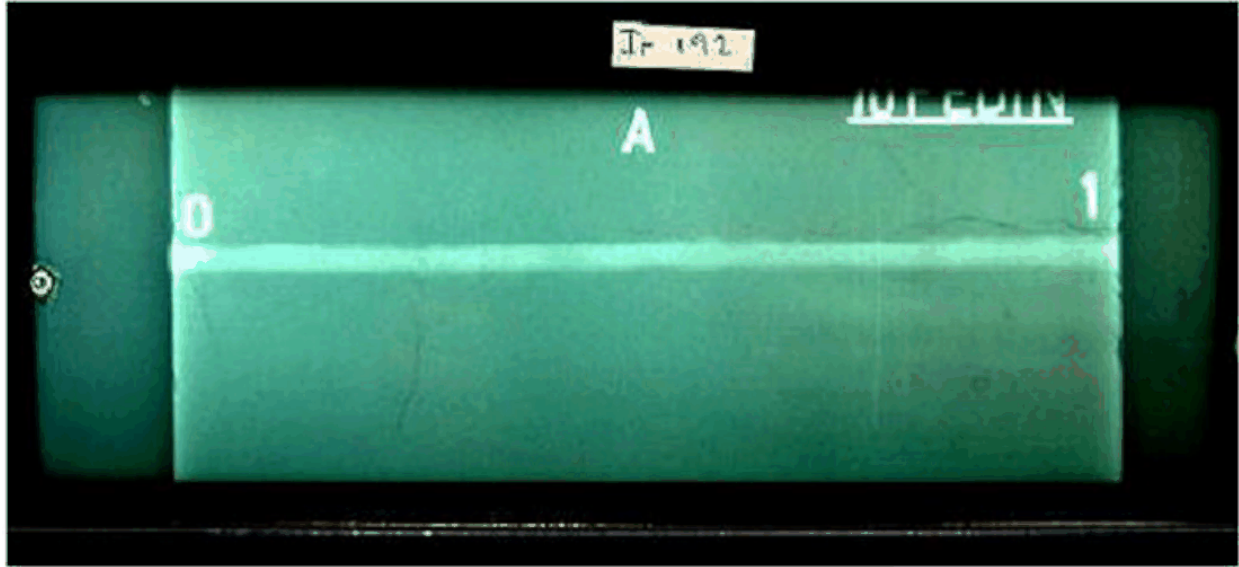


Fig. 4.77.1: This is a radiograph of a weld using ^{192}Ir as the source of radiation. The **gamma rays** given off by the **isotope** enable imperfections in the weld to be seen on the radiograph. (Photo Source: Hayward and Currie, 2006) [271].

4.77.2 Iridium isotopes in medicine

Metallic ^{192}Ir is used in **brachytherapy** [185, 518-520]. $^{191\text{m}}\text{Ir}$ is used for blood flow imaging (angiography), especially in pediatric populations [521, 522].

4.77.3 Iridium isotopes used as a source of radioactive isotope(s)

Iridium consists of two **stable isotopes** (^{191}Ir and ^{193}Ir) from which the **radioactive isotopes** ^{192}Ir and $^{195\text{m}}\text{Pt}$ can be produced. Both are used in **nuclear medicine**.