

NRDC Memo CP-C/476: Spontaneous Fission Assembly (SFASS) Code, Update of Dictionary 18

Boris Pritychenko

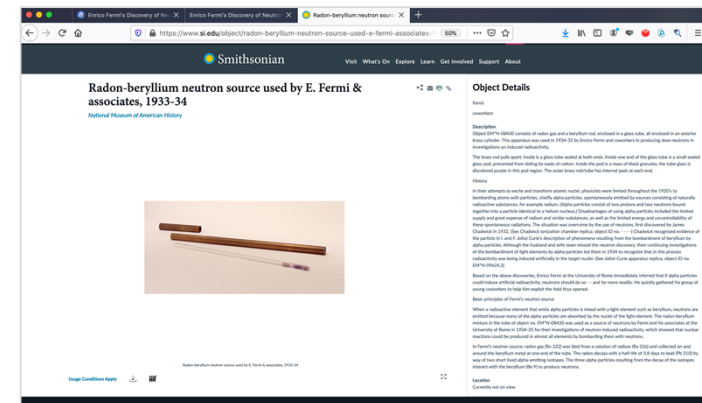
National Nuclear Data Center, BNL, Upton, NY 11973

BROOKHAVEN
NATIONAL LABORATORY

 U.S. DEPARTMENT OF
ENERGY

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- Spontaneous Fission Assembly (SFASS) Code, Update of Dictionary 18.
- E. Fermi neutron sources were small (Be + 200 mg Ra or Rn gas).
- $^{252}\text{Cf}(\text{SF})$ is a poor-man nuclear reactor, 70% and 30% productions at Oak Ridge and Dimitrovgrad, respectively.
- 50 tons cask for 1 gram of ^{252}Cf .
- Design, Construction, and Modeling of a ^{252}Cf Neutron Irradiator: 25 μg at ASU.



Fifty-ton shipping cask built at Oak Ridge National Laboratory which can transport up to 1 gram of ^{252}Cf .^[58] Large and heavily shielded transport containers are needed to prevent the release of highly radioactive material in case of normal and hypothetical accidents.^[57]

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TABLE 3: ^{252}Cf source data without moderation.

^{252}Cf mass	25 μg
Neutron emission	5.75×10^7 n/s
Neutron dose at 1 m in air	0.575 mSv/h (57.5 mrem/h)
Neutron energy	2.3 MeV (average)
Gamma exposure at 1 m in air	0.03478 mGy/h (4.0 mR/h)
Gamma energies	0.2–1.8 MeV

Arizona State University, Tempe, AZ 85287-5706, USA

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- is an independent intergovernmental, science and technology-based organization, in the United Nations family, that serves as the global focal point for nuclear cooperation;
- assists its Member States, in the context of social and economic goals, in planning for and using nuclear science and technology for various peaceful purposes, including the generation of electricity, and facilitates the transfer of such technology and knowledge in a sustainable manner to developing Member States;
- develops nuclear safety standards and, based on these standards, promotes the achievement and maintenance of high levels of safety in applications of nuclear energy, as well as the protection of human health and the environment against ionizing radiation;
- verifies through its inspection system that States comply with their commitments, under the Non-Proliferation Treaty and other non-proliferation agreements, to use nuclear material and facilities only for peaceful purposes.