

Title (en)

METHOD OF PRODUCING THE RADIONUCLIDE NICKEL-63

Title (de)

VERFAHREN ZUR HERSTELLUNG DES RADIONUKLIDS NICKEL 63

Title (fr)

PROCÉDÉ DE PRODUCTION DE RADIONUCLÉIDE NICKEL-63

Publication

**EP 3671762 A4 20210721 (EN)**

Application

**EP 18836226 A 20180423**

Priority

- RU 2017129007 A 20170814
- RU 2018000258 W 20180423

Abstract (en)

[origin: EP3671762A1] The invention relates to the field of production of radioactive isotopes and more specifically to the technology of production of the radioactive isotope Nickel-63 that is used to manufacture beta-voltaic current sources. The method for producing Nickel-63 radionuclide involves obtaining an initial nickel target enriched in Nickel-62 to get the content as high as 98% or more, the bombardment of the target in the reactor and the enrichment of the exposed product into a light fraction. The initial nickel enriched in Nickel-62 is added to the light fraction until it reaches a content of 98% or more, and is used to make a secondary nickel target. The remaining heavy fraction is converted into a metal form and used for the manufacture of beta-radiation sources that are applied in beta-voltaic current sources. After the bombardment, the solution of the nickel target is subjected to radiochemical cleaning to remove Cu-65 and gamma-active isotopes, in particular Fe-59 and Co-60. The technical result consists in the most complete loading of the reactor cell with Nickel-62 isotope and an increase in the amount of Nickel-63 radionuclide produced.

IPC 8 full level

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CPC (source: EP RU)

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Citation (search report)

- [YD] RU 2569543 C1 20151127 - FEDERAL NOE GUP GORNO KHIM KOM [RU], et al
- [A] WO 2017116274 A1 20170706 - FED GOSUDARSTVENNOE UNITARNOE PREDPRIYATIE GORNO-KHIMICHESKY KOMB [RU], et al
- [Y] SOSNIN L J ET AL: "Production of 63 Ni of high specific activity", NUCLEAR INSTRUMENTS AND METHODS IN PHYSICS RESEARCH A, 1 January 1993 (1993-01-01), pages 43 - 44, XP055810900, Retrieved from the Internet <URL:https://pdf.sciencedirectassets.com/271580/1-s2.0-S0168900200X03178/1-s2.0-016890029390526N/main.pdf?X-Amz-Security-Token=IQoJb3JpZ2luX2VjEKM////////wEaCXVzLWVhc3QtMSJIMEYCIQCAV6E20f7p8guRP0dbfCixg6sg7CB2U2IC+pvprP2R2wIhALJh5wrgyP4bO9IZfLu0XhYQIL5DN5rofwx2159pe3EJKvoDCFoQBB0MMDU5MDAzNTQ2ODY1lgz+NR> [retrieved on 20210607]
- See also references of WO 2019035736A1

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