

CERTIFICATE NO. PL/03/A-05 POLATOM (Rev. 3) ---

For type A transportation packaging ---

1. Manufacturer ---

The National Centre for Nuclear Research ---
 The Radioisotope Centre POLATOM ---
 ul. Andrzeja Sołtana 7 ---
 05-400 Otwock ---

2. Intended Use ---

The packaging is adapted for the transportation of radioactive material in quantities not exceeding the values depending on the form of radioactive material, specified in transportation regulations (*IAEA Safety Standards for Protection of People and Environment, Regulations for the Safe Transport of Radioactive Material, Safety Requirements No. TS-R-1, 2005 Edition, International Atomic Energy Agency, Vienna 2005*) limited by the radioactivity level. ---

3. Packaging Description ---

a) a packaging adapted to the transportation of a generator column: ---

- direct packaging - a radioactive nuclide generator column ---
- a shielding container (spec-50) – made of lead and coated with epoxy paint – with the walls 50 mm thick ---
- a cylindrical container made from plastic material (ABS type) – a “vacuum flask” ---
- an additional shield (dependent on the radioactive nuclide activity) ---

| Packaging version | Shielding container symbol | Shielding container outer dimensions Ø x h [mm] | “Vacuum flask” outer dimensions Ø x h [mm] | Protective container weight [kg] | Additional shield | Transportation packaging weight [kg] | Documentation reference number |
|-------------------|----------------------------|---|--|----------------------------------|---|--------------------------------------|--------------------------------|
| I | spec-50 | 120 x 186 | 160 x 295 | 16 | - | 19.2 | Z.53-0 |
| II | spec-50 | 120 x 186 | 160 x 295 | 16 | A lead cylinder Ø/ Ø x h x g [mm]: 131/136 x 200 x 8 with lead bottoms Ø x h [mm]: 150 x 5 and 110 x 5 | 28.6 | Z.53-0 |

- stabilizing polystyrene foam insulation pads – 2 pieces ---
- a steel drum with outer dimensions Ø x h [mm]: 300 x 400 ---



b) a packaging adapted for transportation: ---

- direct packaging – a vial made from natural glass with a stopper and crown-cap (FP-10) with $\varnothing \times h$ [mm]: 23 x 50 ---
- absorbent pads made from polyurethane sponge with $\varnothing \times h$ [mm]: 24 x 6 – 2 pieces ---
- a vial made from a plastic material (S-30 type) with $\varnothing \times h$ [mm]: 29 x 67.5 ---
- a shielding container – made from lead, and coated with epoxy paint ---

| Shielding container symbol | Shielding container pocket dimensions $\varnothing \times h$ [mm] | Shielding container outer dimensions $\varnothing \times h$ [mm] | Shielding container weight [kg] | Transportation packaging weight [kg] | Documentation reference number |
|----------------------------|---|--|---------------------------------|--------------------------------------|--------------------------------|
| P-40 | 33 x 70 | 112 x 155 (112 x 190) | 15.7 | 19.7 | Z.61-0 |
| P-50 | 35 x 85 | 142 x 187 | 32.0 | 36.0 | Z.54-0 |
| P-60 | 33 x 70 | 165 x 200 (165 x 235) | 44.5 | 48.4 | Z.108-0 |

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- polystyrene foam insulation pads – 4 pieces ---
- steel separator plates with cut-off corners (upper and bottom ones) with dimensions a x b x g [mm]: 220 x 220 x 1.5 – 2 pieces ---
- a steel drum with dimensions $\varnothing \times h$ [mm]: 300 x 400 ---

c) a packaging adapted for transportation of sealed sources:

- A direct packaging – a hermetically welded sealed source capsule Ir-192 or Se-75 placed in a holder for a Sentinel or Gammamat defectoscope ---
- A shielding container (ADS-40) – made of lead, in a paint- coated steel housing ---

| Shielding container symbol | Shielding container pocket dimensions $\varnothing \times h$ [mm] | Shielding container outer dimensions $\varnothing \times h$ [mm] | Protective container weight [kg] | Transportation packaging weight [kg] | Documentation reference number |
|----------------------------|---|--|----------------------------------|--------------------------------------|--------------------------------|
| ADS-40 | type S | 156 x 265 (156 x 316) | 20.5 | 24.5 | P-159-0 |

- polystyrene foam insulation pads – 4 pieces ---
- steel separator plates with cut-off corners – 2 pieces --- with dimensions a x b x g [mm]: 220 x 220 x 1.5 – 2 pieces ---
- a steel drum with outer dimensions $\varnothing \times h$ [mm]: 300 x 400 ---



4. Requirements and Testing ---

The packaging has undergone testing in compliance with the *IAEA Safety Standards for Protection of People and Environment, Regulations for the Safe Transport of Radioactive Material, Safety Requirements No. TS-R-1, 2005 Edition, International Atomic Energy Agency, Vienna 2005* with a positive result. The packaging complies with the requirements for type A transportation packaging. ---

5. Date of issue: ---

20th June 2018 ---

APPROVED BY---

A blue stamp reading: ---

**The National Centre for Nuclear Research ---
The Radioisotope Centre POLATOM ---**

DIRECTOR ---

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Dariusz Socha, MEng, PhD ---

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I, the undersigned, Krystyna Sachmacińska, sworn translator of the English language registered under No. TP/1920/06 on the List of Sworn Translators kept by the Minister of Justice of the Republic of Poland, certify that this is a true and correct translation of an original document in the Polish language. (The document consists of 4 pages of certified translation)

Warsaw, 12th March 2020

Repertory No. 54/2020.

