

**APPLICATION FOR REGISTRATION OF TYPE 'A' PACKAGE**

This form relating to the design specifications of a packaging shall be duly filled in by the designer of the packaging or the consignor who proposes to deploy a packaging for transport of radioactive materials and shall submit to Atomic Energy Regulatory Board. Words and expressions used in this form shall have the same meaning assigned to them in the Atomic Energy Regulatory Board Safety Code on Transport. A cut away sketch of 21 cm x 30 cm showing make-up of the packaging must be provided. The form must be accompanied by a safety report on the design details of the packaging of Type A. This form shall be accompanied by a SET OF drawing showing the design of the packaging.

**PART A  
GENERAL PARTICULARS**

1. Name, Designation and address, of the along with Telephone, Fax , E-mail of:

a) applicant

b) designer :

c) manufacturer :

**PART B**

2. DETAILS OF RADIOACTIVE CONTENTS

a) Identity of radionuclide (s)

b) Maximum strength Bq (Ci)

c) Physical form

d) Chemical form

e) Special form

f) If yes, certification details,(if obtained already, attach copy of certificate and special form test reports)

g) Dimension of radioactive material

h) Mass of radioactive material

i )Volume

j) Whether it is mixture of radionuclide,  
if yes the proportion of each  
radionuclide

3. **Details relating to the packaging:**

a) Identity of the Package

b) Whether approved earlier (If yes,  
approval reference)

c) Gross weight of the package

d) Whether the packaging is provided with  
facilities for enabling safe handling by  
mechanical means

e) In case lifting attachments are included in  
the design of the packaging, whether such  
attachments are capable of supporting the  
weight of the packaging without imposing  
stresses on the structure of the package, in  
excess of the yield stresses of the relevant  
parts of the said structure (snatch lifting  
taken into consideration)

f) Whether the lifting attachment and any  
other feature on the outer surface of the  
packaging, which could be used to lift the  
package, are removable or otherwise  
capable of remaining inoperable during  
transport

g) Whether the outer layer of the packaging  
is designed to prevent the collection and  
the retention of water

h) Whether the external surface of the  
packaging is so designed as to facilitate easy  
and swift decontamination

i) Mode of transport

#### 4. CONTAINMENT SYSTEM

(a) Whether the package will be able to withstand effects of any acceleration, vibration or vibration resonance which may arise under routine conditions of transport without any deterioration in the closing devices on the various receptacles or in the integrity of the package as a whole, e.g. nuts, bolts, and other securing devices becoming loose or being released unintentionally, even after repeated use. (detailed analysis to establish above should be attached)

(b) Whether the containment system is leak proof and how it was established.

(c) Description of the closure and positive fastening device (enclose A4 size sketch)

(d) Whether fastening device of the enclosure can be opened unintentionally or by a pressure which may arise within the package.

(e) In case the containment system forms a separate unit of the packaging, whether it is capable of being securely closed by a positive fastening device which is independent of any part of the packaging

(f) Whether the material of the containment system is likely to be corroded by the radioactive contents?

(g) Whether radiolytic decomposition of the liquids or other vulnerable materials and the generation of gas by chemical reaction and radiolysis have been taken into account in the construction of Containment system

(h) Whether the containment system is capable of retaining its radioactive contents under the reduction of ambient pressure to 60 kPa

(i) External dimension of the packing

(j) Whether the package meets the additional requirements for packages transported by air

(Relevant detailed drawings of the containment system and also the lid tie-own should be attached.)

**5. Radiation shielding in the packaging**

- a) Nature of the shielding material
- b) Shielding thickness
- c) The material and the thickness of the shell in which the shielding material is filled
- d) Expected maximum radiation level at the external surface of the package incorporating the maximum intended radioactive content
- e) Expected maximum radiation level at 1 m from the external surface of the package (A note on the effectiveness of the shield in preventing unintentional release of any component of the containment system should be attached)

6. Whether a feature such as seal is incorporated on the exterior of the package as proof against temper. (please establish)

7. Whether there is any protruding feature on the external surface of the packaging.

8. Whether the packaging material can withstand temperature range of  $-40^{\circ}\text{C}$  to  $70^{\circ}\text{C}$  :

9. Whether the materials of the packaging and any components for structures are physically and chemically compatible with each other and with the package contents, taking into account their behaviour under irradiation. :

10. The nature of pressure relief valves provided in the packaging Whether the radioactive contents could escape through valves other than pressure relief valves and whether such valves are protected against unauthorised operation and provided with an enclosure to retain leakage :

11. Whether the tie down attachments on the package are so designed that under both normal and accident :

conditions of transport, the forces in these attachments shall not impair the ability of the package to meet the requirements of the regulations.

12. Whether the packaging was subjected to the water spray test, free drop test, stacking test and the penetration test specified in the AERB code and there was any -loss or dispersal of the radioactive contents

-increase of the maximum radiation level at the external surface of the package as compared to the radiation level before the tests.

- 13 A detailed report on the tests conducted, preparation of the sample, number of sample tested, description of the target or the calculative analysis simulating the above test conditions and the results of the tests or analysis should be attached :

14. Additional information: :  
(Please attach additional sheets, if necessary) :

### **PART C**

### **UNDERTAKING**

I certify that I have furnished correct information to the best of my knowledge and belief. I shall furnish such additional information as may be required by the competent authority in connection with the approval of the design of the above packaging.

SEAL Signature of the applicant

Name:

Place:

Date:

Designation: