



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

JUL 13 2001

Mr. Andrew Romach
Regulatory Manager
Radian International
P.O. Box 13000
Research Triangle Park, NC 27709

Reference No.: 01-0107

Dear Mr. Romach:

This is in response to your April 30, 2001 letter inquiring whether your light bulb meets the definition of a Class 7 (radioactive) material under 49 CFR 173.403. The light bulb contains a glass "starter bottle." The bottle's interior surface is coated with a solution containing a radionuclide. Specifically, you ask whether the specific activity is calculated by using the entire weight of the coated starter bottle or by using the actual weight of the coating.

The specific activity is calculated by using the actual weight of the coating on the starter bottle. If the specific activity is 70 Bq per gram or lower, the light bulb does not meet the definition of Class 7 (radioactive) materials and is not subject to the Hazardous Materials Regulations. If the specific activity is greater than 70 Bq per gram, you may be able to offer the light bulb for transportation as a limited quantity material or surface contaminated object in an excepted package.

This information addresses only the transportation of the light bulbs in question. We suggest that you review the U.S. Nuclear Regulatory Commission regulations in Title 10 of the Code of Federal Regulations regarding the use, possession and disposal of these light bulbs.

I trust you find this information helpful.

Sincerely,

Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
Office of Hazardous Materials Standards



01-0107

173.403

**RADIANT INTERNATIONAL**

A DAMES & MOORE GROUP COMPANY

April 30, 2001

Mr. Ed Mazzullo, Director
Office of Hazardous Material Standards
Research and Special Programs Administration
U.S. Department of Transportation
400 7th Street, SW
Washington, DC 20590-0001
FAX: (202) 366-3012

Corbin
§173.403
Definitions
01-0107

Mailing Address:
Post Office Box 13000
Research Triangle Park,
North Carolina 27709

Physical/Shipping Address:
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

919 461 1100 Tel
919 461 1415 Fax

Dear Mr. Mazzullo:

I am writing to you to request a written regulatory interpretation concerning the correct approach for calculating the specific activity of a light bulb that contains a radionuclide. Such interpretation is necessary for determining whether or not this light bulb meets the definition of a "radioactive material" as set out in 49 CFR 173.403.

This particular light bulb contains a glass "starter bottle" (also called a "glow bottle"). The surface of this glass starter bottle has been coated with a solution that contains a radionuclide. (The specific radionuclide varies depending on the type of coating used.)

DOT defines "radioactive material" in 49 CFR 173.403 as follows:

Radioactive material means any material having a specific activity greater than 70 Bq per gram (0.002 microcurie per gram) (see definition of "specific activity").

DOT defines "specific activity" in 49 CFR 173.403 as follows:

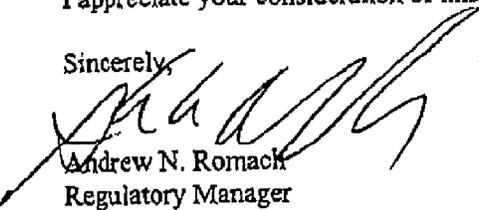
Specific activity of a radionuclide means the activity of the radionuclide per unit mass of that nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the activity per unit mass of the material.

To calculate the specific activity to determine whether or not this light bulb meets the definition of "radioactive material", would the calculation be performed using the entire weight of the coated starter bottle, or only the actual weight of the coating contained on the starter bottle?

Please let me know if there are any other factors to consider when calculating the specific activity for purposes of determining whether or not this light bulb meets the definition of a radioactive material for hazardous material shipping.

I appreciate your consideration of this matter.

Sincerely,


Andrew N. Romach
Regulatory Manager
URS Corporation

Engineering Services in North Carolina are performed through Radian International's wholly owned subsidiary, Radian Engineering, Inc.

Offices Worldwide