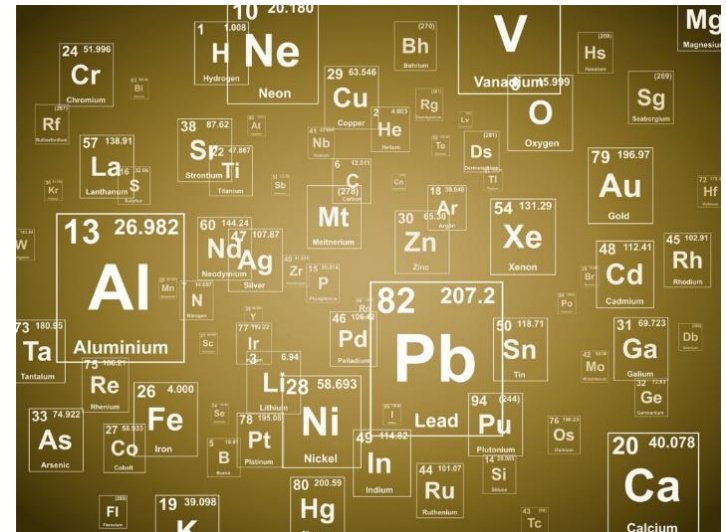


XRF SEALED SOURCE DOT TRAINING

Welcome!

This is a training course on shipping and emergency response when transporting a sealed source XRF analyzer.





Geotech Environmental Equipment, Inc.

800-833-7958 www.geotechenv.com

Your complete source for performance-driven environmental equipment and supplies.

XRF SEALED SOURCE DOT TRAINING

Learning Objectives:

- Training
- Classification and Identification
- Protective Packaging
- Hazard Communication
- Incident Reporting

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Training Requirement

§172.704

- **General Awareness**
Of DOT (and IATA if shipping by air) related regulations
- **Function Specific Training**
Should be applicable to the trainee's work
- **Safety Training**
As related to safe handling and hazard communication. Safety training is not fully covered in this presentation, so additional training may be necessary to meet this portion of the requirement.
- **Record Keeping:** Employers are responsible for the proper training (every three years), testing, and record keeping

Geotech XRF Safety Training and Safety Test are linked here:

- [XRF Safety Training](#)
- [XRF Safety Training Test](#)

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Transportation Regulations are Established by:

**Department of Transportation (DOT)
Title 49 of the Code of Federal Regulations**

DOT regulations allow air carriers and shippers to following certain aspects of the international air transport technical instructions written by:

International Civil Air Organization (ICAO)

And published in a more readable and commonly used format by the

International Air Transport Association (IATA)

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DOT Hazmat Regulations are Enforced by:

Department of Transportation

Federal Aviation Administration

Federal Highway Administration

Federal Railroad Administration

The Coast Guard

Customs and Border Protection

Nuclear Regulatory Commission

Agreement State Agencies

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Protective Packaging

The packaging and its contents must comply with “excepted package requirements” under [§ 173.410](#) and [§ 173.424](#).

- Geotech transports all XRF analyzers in the instrument carry case that is packed within a box for assurance that these requirements are met.



[Viken Pb200i](#)
[Lead Paint XRF](#)



Carry Case



Protective Box

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Classification and Identification

Viken pb200i is considered to contain a Class 7 radioactive material.
A category of shipping classifications are as follows:

- 1) Explosives
- 2) Gases
- 3) Flammable and Combustible Liquids
- 4) Flammable solids, combustible materials, and dangerous when wet materials
- 5) Oxidizers and organic peroxides
- 6) Toxic materials and infectious substances
- 7) Radioactive Materials
- 8) Corrosive Materials
- 9) Miscellaneous dangerous goods

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Classification and Identification UN identification

[§ 173.422](#)

Additional requirements for accepted packages containing class 7 radioactive materials:

- An excepted package of Class 7 radioactive materials does require a UN identification for ground and air transportation.
- The UN number is a four digit code which allows emergency responders to identify the content being shipped.
- 9 • The UN number for the Viken pb200i is “UN2911”

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Classification and Identification UN identification and Official Designation

For air transportation – the material being shipped must also be identified with the following official designation included on the label.

“Radioactive material, excepted package-instruments”



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Classification and Identification UN identification and Official Designation

FOR GROUND TRANSPORTATION – shipping carrier or vehicle

The material being shipped requires only the UN designation labeled on the box.



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Classification and Identification QR (Recordable Quantity)

Viken pb200i contains a quantity of 5 mCi (.005 Ci) of CO^{57} radioisotope.

- The radioactive material is contained in a sealed capsule – referred to as a “sealed source capsule”.
- A Recordable Quantity (RQ) for normal form Class 7 radioactive material excepted packages cannot exceed 27,000 mCi (270 Ci) of CO^{57} .

Summary:

The Viken pb200i does not require specific RQ labeling or a dangerous goods declaration form for air transport under ICAO/IATA rules.

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Protective Packaging & Labeling Summary

- Repackage the instrument carry case into the packaging (box) supplied by Geotech that includes:
 - ✓ “UN2911 identification” for Ground and Air-Transportation
 - ✓ “Radioactive Material, Excepted Package” for Air-Transportation only.
- Contact a Geotech representative if the box and/or label is damaged.
- Returning an XRF without the box will result in a “no box fee” and potential regulatory penalties due to improper labeling



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Emergency Response Instructions

If this instrument is lost or stolen, notify your Radiation Safety Officer (RSO) or the equivalent responsible individual at your organization. The RSO must notify the local radiation regulatory authority and the local police. In addition, please notify Geotech of the loss.

- ✓ Additional emergency procedures can be found on page 49 of the user guide linked below.
- ✓ Maintain emergency contact numbers. A form can be found on page 50 of the User's Guide, linked below.
- ✓ Place copies of these document in the glove compartment (or at arms reach of the driver) of any car used to transport the XRF analyzer.

http://www.geotechenv.com/Manuals/Viken_Manuals/Viken_Pb200i_User_Guide.pdf

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Incident Reporting

The DOT & FAA Hazardous Materials Regulations require carriers to report all incidents involving hazardous materials.

An “incident” involves the unintended release of hazardous materials, suspected radioactive contamination, the general public is evacuated for an hour or more, or the flight pattern or routine of an aircraft is altered.

Hazardous Materials Information Center

1-800-467-4922

Mon-Fri 9AM-5PM Eastern Time

<http://hazmat.dot.gov>

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Guide to Regulations

A guide to sections of Title 49 of the Code of Federal Regulations (CFR).

- [§ 172.704 Training Requirements](#)
- [§ 173.410 General design requirements.](#)
- [§ 173.422 Additional requirements for excepted packages containing Class 7 \(radioactive\) materials.](#)
- [§ 173.424 Excepted packages for radioactive instruments and articles.](#)
- [§ 173.425 Table of activity limits—excepted quantities and articles.](#)
- [§ 173.435 Table of A1 and A2 values for radionuclides.](#)