

Section II

(previously Section I of Oregon OSHA's Technical Manual)

SAMPLING, MEASUREMENTS METHODS and INSTRUMENTS

CHAPTER 1: PERSONAL SAMPLING FOR AIR
CONTAMINANTS

CHAPTER 2: OCCUPATIONAL SKIN EXPOSURE

CHAPTER 3: TECHNICAL EQUIPMENT: ON-SITE
MEASUREMENTS

CHAPTER 4: [SAMPLE SHIPPING AND HANDLING](#)

*All information within this section and chapter has been reproduced from the Oregon OSHA
Technical Manual (circa 1996) unless otherwise stated within the
"Chapter Revision Information", located at the beginning of each chapter.*

SECTION II: CHAPTER 4

SAMPLE SHIPPING AND HANDLING

Chapter Revision Information:

- *This chapter was previously identified as Section 1, Chapter 4 in Oregon OSHA’s circa 1996 **Technical Manual**. The Section number was modified from Section I to Section II in December 2014 to provide uniformity with the Federal OSHA Technical Manual (OTM).*
- *In December 2014, the original “Sample Shipping and Handling” chapter was updated.*
- *In September 2022, the chapter was updated to reflect current Oregon OSHA operating procedures.*

SECTION II: CHAPTER 4

SAMPLE SHIPPING AND HANDLING

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I. Introduction

This chapter contains sample handling, packaging, and mailing instructions for industrial hygiene samples to be shipped to the Oregon OSHA Lab, hereafter referred to as the Lab, or another accredited facility. Certain Department of Transportation (DOT) Regulations (49 CFR) may apply to shipment of materials. Access 49 CFR, Subtitle B, Chapter I, Subchapter C – Hazardous Materials Regulations at [eCFR/Hazardous Materials Regulations](#).

A. Sample Collection

Collect all samples following the procedures outlined for the specific chemical in the [Oregon OSHA Lab Sampling Procedures](#). These procedures outline the media to use; recommended flow rates, volumes, and sampling times; and special sampling and shipping instructions. If a certain chemical is not listed, contact the Lab for instructions.

B. Interferences

Lab notification: Laboratory sampling methods may be susceptible to interferences by other compounds present in the sample. For this reason, the Lab must be notified if a suspected interfering substance may be present in the sample. Whenever possible, include an SDS with the samples to help the Lab identify potential interferences.

Interfering substances may be found in the following:

- **Solvents** with the same boiling point and polarity as the substance being tested may cause interference. Mass spectral identification may be used to help resolve any conflict.
- **Crystalline silica:** Other crystalline minerals may interfere with quartz and cristobalite analysis; albite, in particular, interferes with cristobalite. A library search of a bulk sample analysis may be used to identify other crystalline compounds.
- **Asbestos:** All fibrous materials and high non-fibrous dust levels may obscure asbestos fibers for identification.
- **Metals:** High concentrations of other metals and inorganic dust may affect analysis.

C. Bulk samples

Bulk samples should be submitted to the Lab in the following circumstances:

- When an analysis is required to support a potential violation, for example, crystalline silica in sandblasting operations or asbestos in building demolition.
- As an analytical reference (e.g., metalworking fluids), or to verify solvent mix composition (as in petroleum distillates), or to identify interferences.
- When the chemical composition of the material is unknown as in an inadequate SDS.

Bulk sample results are reported as approximate because the Lab analyzes only a portion of the sample submitted and the result may not exactly represent the entire sample submitted.

II. Mailing Instructions

A. General Information

Samples sent to the Lab should be packaged with a copy of the original Sample Submittal Form to identify the samples. If not included, the Lab can print the form from the LIMS system. Samples are usually sent by the DAS shuttle system, but for those areas outside the shuttle's service area, U.S. Mail or other appropriate shipper may be used. When such methods are used, carrier receipts shall be retained by the field office until the samples arrive at the Lab.

Since all samples are subject to possible litigation, there must be a chain and/or proof of custody of the samples from the field to the Lab. The preferred form is a certified mail receipt. Samples shipped by certified mail go first class (air mail). Samples shipped through the State shuttle system should use a PacTrac label. All samples should be properly sealed with a lab custody seal and accompanied by a Sample Submittal Form.

If any submitted materials could be considered hazardous, consult and follow appropriate shipping regulations to assure safe handling during shipment. Be sure to follow the Lab's [shipping guidelines](#) for bulk samples. All samples should have a lab custody seal.

B. Filter Cassettes

Pack filter cassettes inside a sturdy cardboard box with sufficient packing material so the samples will not be damaged by outside shocks or striking against each other.

C. Sorbent Tubes

Sealed tubes should be put in a Whirl-Pak® bag or other sealable plastic bag to prevent individual tubes from being mixed with the packing material. For sorbent tubes which must be shipped cold, pack the tubes in a plastic bag with an ice pack to prevent the tubes from slipping away from the ice during shipping, then enclose the plastic bag with bubble wrap and ship in a sturdy container or small cooler.

D. Midget Impinger or Fritted Glass Bubbler Samples

After sampling, unscrew the top portion from the impinger vial and place back on the empty vial and screw into place. The caps should be secured with sealing tape wrapped in the direction of the cap closure (clockwise) to prevent the caps from loosening. Return impingers as they were received following the Lab's recommended storage instructions. If the sampling media needs to be kept cold, ship in a cooler with ice packs. Do not ship prior to a weekend or holiday to ensure samples arrive at the Lab in a timely manner. [Safety Data Sheets](#) (SDS) for the media are available on the Lab's website.

E. Wipe Samples

Wipe samples should be in liquid-proof containers to prevent cross-contamination from any source or contaminants in the mailing container.

F. Bulk Samples

Important: Bulk solvent samples should never be mailed to the Lab in the same package with any other type of air sample to avoid cross contamination. The Lab's shipping guidelines for bulk samples are detailed at [Oregon OSHA bulk sample shipping guidelines](#).

G. Soil Samples

For soil, pesticide, and other non-routine samples, contact the Oregon OSHA Lab for instruction. Samples submitted for Class II combustible dust analysis by the Salt Lake Technical Center need to be submitted in two one-liter Nalgene containers accompanied by Federal OSHA [Form 91S](#). Prior management approval is also required.

Consult the Lab's website for additional information on [combustible dust sampling](#).

III. Federal Mailing Regulations

A. Jurisdiction

When shipping hazardous materials to the Lab, Department of Transportation (DOT) regulations must be followed. Such regulations may prohibit or place limitations on the use of the United States Postal Service (USPS), the state shuttle service, or other common carriers.

B. Responsibility

The shipper is responsible for compliance with applicable transportation or postal laws and regulations governing acceptability to the carrier and additional packaging requirements. All items that are acceptable for mailing are subject to provisions of USPS [Publication 52](#), Acceptance of Hazardous or Perishable Articles.

The Transportation Safety Act of 1974 extended the Department of Transportation's (DOT) authority over transportation of hazardous or restricted materials. The full text of the hazardous materials regulations is contained in [Title 49, Code of Federal Regulations, Parts 100-199](#). It is the shipper's responsibility to comply with all applicable DOT regulations.

C. Hazardous Materials

The main categories of hazardous materials sent to the Lab are:

- poisons
- flammable liquids and solids
- oxidizers
- corrosive materials (acids and alkalis)
- irritating materials
- biological samples

[49 CFR Table 172.101](#) is vital to understanding current DOT regulations for domestic shipment of hazardous materials. To ensure that current regulations are followed, it is important to use only the most recent edition of 49 CFR.

The USPS and private carriers base their shipping procedures for hazardous materials on the DOT 49 CFR regulations. These regulations are the minimum acceptable for hazardous materials. In some cases, the carriers have chosen to be more restrictive than DOT regulations. In using these procedures, it is the shipper's responsibility to determine if the carrier they plan to use is more restrictive than DOT. The shipper must comply with the carrier's requirements.

D. Notice to the Carrier

For all modes of transportation, the carrier must be clearly informed that hazardous material is being tendered. Serious Federal civil and criminal penalties can be imposed for violations of the provisions in Title 49.

The great variety of chemicals precludes the listing of each item that may be mailed. [Publication 52](#) from the United States Postal Service details what is restricted and includes:

- Combustible/flammable liquids and solids
- Compressed gases
- Corrosives
- Gasoline
- Herbicides
- Hydrochloric, hydrofluoric, nitric, and sulfuric acids
- Hydrogen peroxide
- Oxidizing substances
- Organic peroxides
- Organic phosphate compounds
- Pesticides
- Poisons

Solid sorbent tubes, filters, and wipe samples are not classified as hazardous materials and can be shipped as regular certified mail through the USPS.

When a restricted article is tendered for shipment, the customer is required to identify, classify, package, mark, label, and certify all articles as specified in Title 49. Shipper's Certification and labels for restricted articles can be obtained from:

Labelmaster
5724 N Pulaski Rd
Chicago, IL 60646
1-800-621-5808
<http://www.labelmaster.com>