


<p><b>Carnegie Mellon University</b> Environmental Health &amp; Safety</p> <p>FIRE   LAB   WORK </p>	<p><b>Environmental Health and Safety</b></p> <p><b>Iodination - Guideline</b></p>
<p><b>Date of Issuance:</b> 1/10/18</p>	<p><b>Revision Date:</b> 8/2020</p>
<p><b>Revision Number:</b> 2</p>	<p><b>Prepared by:</b> EHS</p>

## 1. Introduction:

The following guidelines and requirements are put forth to aid the investigator in establishing safe iodination procedures and complying with existing Radiation Safety procedures.

## 2. Requirements:

- a. *Prior Radiation Safety Officer Approval of Protocol a Request for Authorization to Procure and Use Radionuclides for Non-Human Use, RS2.1 form 1, and Training Summary, RS2.1 form 2,* must be submitted to and approved by the Radiation Safety Officer. The application must include a written protocol and a summary of each individual's experience.
- b. Fume hood checkout  
Environmental Health and Safety must perform an inspection of the hood that will be used in order to verify adequate flow. A label will be applied to the front side of the hood sash indicating that a check was performed.
- c. Survey instrument  
A survey instrument equipped with a NaI detector must be present during the procedure. This instrument must have a current calibration date.
- d. Personnel monitoring
  - i. Dosimetry  
Participating individuals must wear personnel dosimetry
- e. Bioassay  
Baseline thyroid scan may be required for individuals performing an iodination. The Radiation Safety Office will determine this requirement on a case-by-case basis.
- f. Air monitoring  
In order to allow monitoring of the radioactive effluent during the iodination procedure, an air-sampler will be utilized. The Radiation Safety Office will provide the sampler.
- g. Notification  
Contact the Radiation Safety Office 24 hours in advance of each iodination. This will allow adequate time to set up air samplers and schedule bioassays (if required).

## 3. Procedural Guidelines:

- a. The iodinator is responsible for starting and stopping the air sampling pumps and recording the start/stop times on a standardized form. Other information to be noted on this form includes the total activity used, the names of the Authorized User and involved individuals, the date of iodination.
- b. Set up a defined work area including waste repository and survey instrument station. All work surfaces must be covered with absorbent padding.

- c. Take standard lab precautions such as wearing eye protection, protective clothing and gloves (double gloves are recommended). **All nonparticipating lab personnel are not permitted in the lab during the procedure.**
- d. At the conclusion of the procedure, replace your gloves and take one smear of the outer-cartridge and the tube of the air-sampler and a second smear of the on-button of the air-sampler pump. These smears must be placed in a sealed container (i.e. plastic bag with seal) and labeled accordingly. The cartridge must then be placed in a sealed container.
- e. Consolidate all waste materials into approved yellow bags, place in the hood and contact the Radiation Safety Office for waste pick-up.
- f. Utilizing the survey instrument, perform monitoring of the experiment area and all personnel involved.
- g. Perform a contamination survey of the area and document the results on a standard lab survey form. For multiple user laboratories, post the hood with a sign indicating that the hood should not be used until it has been surveyed for contamination.
- h. If required, schedule a thyroid scan through the Radiation Safety Office.

#### 4. Proper Handling of Waste:

- a. Utilizing the survey instrument, perform monitoring of the experiment area and all personnel involved.
- b. Perform a contamination survey of the area and document the results on a standard lab survey form. For multiple user laboratories, post the hood with a sign indicating that the hood should not be used until it has been surveyed for contamination.
  - i. When finished with the iodination, immediately reduce (from iodine to iodide) all fractions, liquid waste and residual iodine on equipment with sodium metabisulfite or thiosulfate.
  - ii. If there are items contaminated with iodine that cannot be reduced, store them in a fume hood inside a sealed bag containing activated charcoal. This is also the recommended method of storing unused I-125.

#### 5. Revisions

Date	Documented Changes	Initials
1/28/2020		
8/2020	Updated format	MAS