

Spotlight On Safety

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Radioactive Spills

How to determine if it is a major or minor spill

Spill assessment considerations:

- Isotope emission characteristics
- Radioactive material volatility
- Quantity of radioactive material involved
- Size of contaminated area
- Potential for spreading contamination
- Potential dose – external and internal



Definition of Minor Spill

A spill that remains contained, that can easily and effectively be cleaned up without assistance from EH&S Radiation Safety and that does not involve personnel contamination.

Definition of Major Spill

A spill that involves contamination of personnel or results in contamination outside of the intended work area, and that cannot be promptly cleaned up.

Decontamination Procedure

- Put on appropriate PPE (double gloves, booties, lab coat, goggles) before entering areas where there may be contamination.
- Define the outer boundary of the contaminated area and mark off with tape.
- Clean from the outer edge of the contamination and work inward.
- Use a spray solution and wipe up with paper towels or other absorbent material to remove as much removable contamination as possible.
- Low activity spills not containing hazardous materials can be cleaned up by using soap and water. Take a 1ml sample of the waste water. If it is radioactive, it must be disposed as liquid radioactive waste.
- While cleaning towards the center area, check newly cleaned areas for loose contamination before walking or kneeling in these areas. Bench paper may be placed over these areas to prevent recontamination.
- Tape off and shield any areas where the contamination cannot be easily removed for further decontamination efforts.
- Re-survey area.
- Wash until removable contamination is gone.
- When wipe tests confirm only fixed contamination remains, appropriately shield the contaminated area and label with isotope, activity and date.
- Document that the area has been decontaminated and place in the lab notebook along with the initial survey.

Equipment Decontamination

- Use a spray solution and wipe up with paper towels or other absorbent material to remove as much removable contamination as possible. Be cautious not to flood the area with cleanser since it will wash the contamination into cracks, which will be difficult to decontaminate.
- Low activity spills not containing hazardous materials can be cleaned up by using soap and water. Take a 1ml sample of the waste water. If it is radioactive, it must be disposed as liquid radioactive waste.
- Wash until removable contamination is gone.
- Re-survey the equipment.
- Wash until removable contamination is gone.
- When wipe tests confirm only fixed contamination remains, appropriately shield the contaminated area and label with isotope, activity and date.
- Document that the area has been decontaminated and place in the lab notebook along with the initial survey.

Clothing Decontamination

- Remove the contaminated clothing carefully to avoid or minimize contaminating your skin.
- Check your skin for possible contamination. Decontaminate the skin as indicated below before continuing with clothing decontamination.
- Determine approximate activity on the clothing.
- If clothing contamination is less than the daily sewer disposal limit, wash the clothing with soap and water in the sink, recording the sewer disposal activity.
- Re-survey the clothing.
- If the clothing contamination is more than the daily sewer disposal limit and cannot be easily cleaned, the clothing will have to be held for decay or disposed as radioactive waste.

Skin Decontamination

- Have someone in the lab contact Radiation Safety at 951-827-5528.
- Wash contaminated area with mild soap and rinse with running tepid water (or wetted towels).
- Do not abrade or scrub the skin.
- Survey after each washing and drying for cleaning efficiency.
- When washing with soap and water no longer reduces the contamination, record the remaining activity on the skin and apply lotion to keep the skin moist and help loosen the contamination. Apply a bandage over the area to sweat out contamination. Monitor the area each day until the contamination is gone. Survey the bandage and dispose of it as RAM waste, if necessary.

When is Something Decontaminated?

When the results of wipe tests or assays reveal activity levels to be less than 2 times background

For more information visit www.ehs.ucr.edu or call 951-827-5528 if you have questions.