

Spill procedure: Clean-up guidance

The following steps should **only be taken by those trained and competent** to do so. **If you are unable to identify somebody with sufficient knowledge and understanding to conduct a spill cleanup, cordon off area and seek expert external assistance.**

1. Prevent the spread of dusts, particles and vapours and protect yourself / others.

If the substance is volatile or can produce airborne dusts. Close the laboratory door and increase appropriate exhaust ventilation (through fume hoods, for example) to prevent the spread of dusts and vapours to other unprotected areas.

2. Ensure all necessary personal protective equipment (including respiratory protective equipment) is in place for all those conducting the clean-up exercise, checked for effectiveness against the spilt material (e.g. breakthrough time, protection factor) and any fitting has been conducted (e.g. face fit test for respiratory equipment) prior to the cleanup.

3. Check that all other materials and local / external permits necessary for the clean-up is in place, including transport.

4. Inactivation or neutralisation, only if possible and safe to do so.

Spills of many liquid acids or bases, once neutralized, could be scooped up and collected into suitable compatible containers. However, be careful because the neutralisation process is often vigorous, causing splashes and yielding large amounts of heat. *If safe to do so, neutralise acids with soda ash or sodium bicarbonate. Bases can be neutralized with citric acid or ascorbic acid. Use pH paper to determine when acid or base spills have been neutralised.*

Biological spills should be inactivated with a suitable and effective disinfectant. A 2x stock should be prepared for use.

3. Control the spread of the liquid.

Contain the spill. Make a dike around the outside edges of the spill. Use absorbent materials such as vermiculite, cat litter (*note - these may produce additional toxic gases with certain chemicals / solvents*), or absorbent spill pillows.

4. Absorb the liquid.

Add inert absorbents / neutralising agents (for acids / bases) or disinfectant (biological) to the spill, working from the spill's outer edges toward the center. *Absorbent materials, such as cat litter or vermiculite, are relatively inexpensive and work well, although they are messy. Spill pillows are not as messy as other absorbents, but they are more expensive.* Note that specific absorbents are required for chemicals such as hydrofluoric and concentrated sulphuric acids.

5. Collect and contain the cleanup residues.

The neutralised spill residue or the absorbent should be scooped up without creating dusts and placed into an eco-lock bin or other suitable compatible plastic container. For dry powders or liquids absorbed to dryness, double bag the residue using plastic bags. Additional packaging may be required before the waste can be transported from your laboratory. For spills of powders or solid materials, you may need to add a dust suppressant. Be sure to place descriptive hazard labels (GHS symbol, name/s of chemicals solvents, date, person responsible, QMUL School or Institute – Centre, Building and Room Number) on each container.

6. Dispose of the waste.

Keep clean-up waste separate from other wastes. Contact QMUL Health & Safety Directorate or your School / Institute contact to dispose of the waste via the hazardous chemical waste store. See

<http://hsd.qmul.ac.uk/Lab%20Safety/Hazardous%20Waste/index.html>

7. Decontaminate the area and affected equipment.

Ventilating the spill area may be necessary. Open windows or use a fan unless the area is under negative pressure. In some instances, QMUL Health & Safety Directorate can test the air to ensure that hazardous vapours are gone. For smaller spills, conventional cleaning products, applied with a mop or sponge, will provide adequate decontamination. If you have any question about the suitability of a decontaminating agent, seek expert advice.

The following precautions apply to chemicals that have hazardous characteristics. Note that some chemicals may exhibit more than one characteristic.