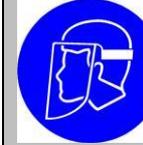
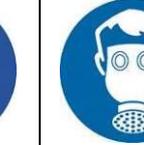


Standard Operating Procedure SOP-014	Revision 0
SPILL PREVENTION AND RESPONSE	

1. Activity	Spill Prevention and Response
2. Associated Risk and Environmental Impact Assessment	RA-014 Spill Prevention and Response
3. Control measures	
1) Ensure you have <u>ALL PPE in proper working condition.</u> 2) Spill Response Kit provision and maintenance program.	3) All emergency response equipment to be on site. 4) Perform regular spill response drills and exercises.

4. PPE							
							
√		√	√		√	√	
Helmet, EN 397, EN50365	<i>[specify type]</i>	Goggles, mask type, EN 166	Chemical Resistant Face shield, EN 169, 175, 379	<i>[specify type]</i>	Half face mask combined with organic vapor cartridges, EN 140, EN 143	Full face mask combined with organic vapor cartridges, EN 140, EN 143	<i>[specify type]</i>
							<i>other</i>
	√		√	√			
<i>[specify type]</i>	Long sleeves coverall EN 943-1	<i>[specify type]</i>	Chemical Protection Gloves, EN388 EN420 EN374	Safety leather boots, EN ISO 20345 S5, S3	<i>[specify type]</i>	<i>[specify type]</i>	<i>[specify type]</i>

5. Forms & Attachments
None

6. Pre-job checks	
1) Familiarize yourself with spill response kits locations and content. 2) Familiarize yourself with relevant procedures	3) Make sure you understand the differences about chemical protection of your PPE. 4) Check Emergency arrangements.

7. Execution

1) SPILL PREVENTION

- Familiarize yourself with the potential hazards of chemicals at your work. Read the relevant Material Safety Data Sheets (MSDS's)
- Evaluate the type of toxicity of the hazardous chemical (i.e., corrosive, irritant, sensitizer, carcinogen) and the possible routes of exposure (i.e., inhalation, skin absorption, ingestion, injection). Evaluate hazards of flammable and explosive chemicals.
- Select appropriate procedures to minimize exposure. Wear appropriate eye protection and protective apparel.
- Ask yourself, what is the worst that could happen? Ask yourself if you are prepared to handle such a situation. Do not underestimate risks, and consider substituting less hazardous materials, techniques, and equipment.
- Be prepared for accidents. Know what specific action you will take in the event of a chemical spill. Know the location of the laboratory spill kit, be familiar with the location of the nearest fire alarm and telephone, and know emergency telephone numbers.
- Have a knowledgeable colleague review your experimental design and safety procedures to judge the adequacy of the precautions and emergency steps.
- Purchase only the amount of hazardous material that will be used within a reasonable period, in the smallest container that is practical.
- Plan the transportation of hazardous materials to avoid heavy traffic areas and times. Use hazardous materials inside the chemical fume hood.
- Use secondary containers, metal cans, or plastic-coated bottles for storing and transporting.
- Do not place glass containers of chemicals on the floor.
- Take precautions to avoid fallen or leaking gas cylinders.



2) MINOR SPILL

- If you have an opportunity to extinguish nearby ignition sources or contain the spill at the source without risk of injury, please do so.
- If any hazardous material has spilled on you, remove affected clothing immediately and flush the area with water.
- Inform responsible personnel
- Retrieve the spill kit. Stop and think about your plan to clean the spill. Do you have the right materials to clean the material up safely? If not,



- Remove the gloves and goggles and from the kit, put them and all appropriate PPE on before approaching the spill

3) MAJOR SPILL

Consider a spill to be a 'major spill' if:

- you are **not comfortable** proceeding with cleanup
- it involves more than 5L of a hazardous material
- there is a risk of fire or explosion
- the material creates a respiratory hazard (toxic/noxious odours e.g., ammonia, concentrated hydrochloric acid, mercaptoethanol)
- the spill involves unknown or incompatible chemicals
- spills of oxidizing acids (conc nitric acid, perchloric acid, chromic acid etc..)
- spills of unstable, air or water reactive materials

In the event of a major spill:

- If you have an opportunity to extinguish nearby ignition sources or contain the spill at the source without risk of injury, please do so.
- Notify everyone in the area and evacuate to the hall. Administer first aid if necessary.
- Notify emergency team / responsible.
- When emergency responders arrive, provide them with all relevant information on the type and quantity of material spilled.
- Report to medical department if you think you have been exposed to any hazardous material



4) SPILL RESPONSE KIT

Make sure you know where such kits are placed

Contents:

- Goggles
- Chemically resistant gloves
- Absorbent materials (booms, pads, pillows)
- Acid neutralizer
- Base neutralizer
- pH test strips/paper
- Solvent suppressant
- Plastic bags for waste materials
- Plastic scoop and scraper



- 5) Properly dispose all used materials according to supervisors instructions
DO NOT dispose chemical materials like normal waste.



8. After work checks

- 1) Make sure there are no spill remnants before leaving the area.
- 2) Retrieve unused spill kit contents and replace used ones.

Issued	Checked	Approved
<i>Signature</i> <i>Date 29/07/2016</i>	<i>Signature</i> <i>Date 29/07/2016</i>	<i>Signature</i> <i>Date 29/07/2016</i>