



UNIVERSITÀ
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DI PADOVA

OPERATING PROCEDURE NO. 6

INFORMATION SHEET ON THE MANAGEMENT OF CHEMICAL LIQUID/SOLID SPILLS

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Curated by:

Environment and Safety Office



INFORMATION SHEET ON THE MANAGEMENT OF CHEMICAL LIQUID/SOLID SPILLS

Purpose

The purpose of this procedure is to minimize risks and activate remediation systems in the event of an accidental spill of chemical products or preparations.

Spills require immediate intervention by trained, informed, and skilled personnel who are equipped to use appropriate spill containment kits and other remediation systems to restore the affected area.

The affected *area* can be classified as follows:

- 1 - **Work Environment** – An indoor space, facility, or relevant area (including open-air spaces) where the spill may pose health and safety risks to workers;
- 2 - **External Environment** – An incident that may result in negative environmental impacts (air, water, soil, or subsoil), requiring intervention to restore the site. For this type of incident, refer to the guidelines outlined at the end of the section "Procedure to follow in case of liquid/solid substances spill".

Risks Associated with Accidental Chemical Spills

The main risks related to the spill of hazardous or non-hazardous chemical substances stem from contamination, which could affect both the environment and workers, leading to harmful effects on health and safety.

Special attention must be given to the spill of flammable substances, as they could ignite and cause fires or explosions. **In any case, it is recommended to always check the safety data sheets of individual compounds.**

Another potential hazard associated with liquid spills is the risk of worker slips, which could result in fall-related injuries or, internal transport vehicles, such as forklifts, may skid, leading to possible loss of cargo or collisions with people.

Spill Containment Kit

It is reminded that, according to Article 77 of Legislative Decree 81/2008, there is an obligation for training and practical instruction on the correct use of Category 3 PPE; Article 4 of Legislative Decree 475/92 (and subsequent amendments) defines the three categories of PPE.

Below is a non-exhaustive list of essential materials for managing chemical spills:

- Tyvek protective gown/suit for protection against chemical agents;
- Protective footwear suitable for chemical exposure;
- Nitrile/neoprene gloves for chemical protection;
- Protective goggles against splashes and chemical sprays;



- Half-face or full-face masks with multi-purpose filters or self-contained breathing apparatus (the type of filter required is specified in the safety data sheet of the spilled substance);
- Universal absorbent powder or granules for chemical spills;
- Absorbent pads, pillows, and booms;
- Disposal bags;
- Dustpan and brush for collecting spilled material.

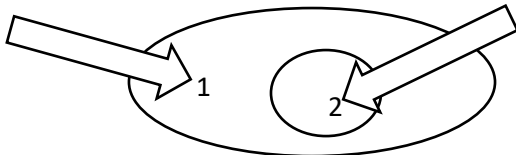
Procedure to follow in case of liquid/solid substances spill

Main rules of good conduct to follow in case of a spill of liquid chemical products or solid chemical substances:

- If possible, before leaving the room where the spill occurred, identify the type of spilled substance;
- Notify the supervisor/laboratory manager of what happened and report the dynamics of the event;
- If the situation allows, ventilate the room, open the windows, and close the door when leaving;
- Request the intervention of the emergency response team trained for such emergencies or first aid personnel if there are injured individuals;
- Communicate what happened to the Safety Service;
- Place a sign on the door indicating "No Access";
- Retrieve the safety data sheet of the spilled substance and **assess the feasibility of a possible remediation intervention; if not possible, contact the Safety Service and the Environmental Service, which will carry out an inspection based on their respective competencies;**
- It is reminded that remediation must only be carried out by structured, trained, informed, and skilled personnel in remediation procedures; each intervention must be conducted in the presence of at least two people;
- Assess the chemical/physical characteristics (flammability, reactivity, toxicity, carcinogenicity) of the substance and apply the appropriate precautions;
- In the case of flammable liquids and combustible powders, verify the potentiality of explosive atmosphere formation;
- The entire procedure must be carried out using the appropriate PPE (full-face masks, self-contained breathing apparatus, gloves, Tyvek suits, etc.); carefully read the information provided in the safety data sheet of the spilled substance;
- Assess the possibility of using spill containment kits: universal absorbent powders, pads, and containment booms;
- To prevent further contamination of the area (floor, countertops, cabinets, etc.), first take action to contain the spill;



- Absorb and collect all the spilled material, moving from the outer edges (1) toward the center (2);



- Use a suitable dustpan and brush for disposal to collect the absorbed material;
- Clean the **completely decontaminated** area with water and absorbent cloth;
- Collect the washwater;
- All materials used for the collection of the spilled substance and the washwater should be placed in designated containers for chemical waste disposal;
- The disposal method for the decontaminated material must be agreed upon with the service responsible for the disposal of special chemical waste.

In case of incidents that result in environmental or atmospheric contamination, the personnel present or those who become aware of the event must notify the Activity Manager (laboratory, project, etc.) and the Facility Manager (Department, Center, etc.). If there is a danger to the surrounding population, notify the relevant local authorities (Fire Department, ARPAV, Emergency Services 118).

They, in collaboration with the Environmental Service, Safety Design, and Safety Service, will proceed with the actions required by **Title V – Part Four of Legislative Decree 152/2006 or Part Five – “Regulations on Air Protection and Reduction of Atmospheric Emissions,”** and any necessary safety measures to be taken.

Reference Regulations

Legislative Decree No. 81 of April 9, 2008 – "Consolidated Act on Health and Safety at Work."

Legislative Decree No. 152 of April 3, 2006 – "Environmental Regulations."

Directive 94/9/EC ATEX – Publication of the list of harmonized standards.

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