

Fact-sheet - How to store the chemicals? Part III



What is the objective?

Why the factory should follow specific requirements for a proper and safe storage of chemicals?

- **To prevent and mitigate** the risk of incidents (chemical spill, incompatible chemicals reactions, fire, etc.);
- **To reduce and control the workers exposure** to chemical hazards (vapors, fumes, toxic dust, etc.);
- **To keep the chemicals in good conditions** and avoid a waste or deterioration of chemicals.

To store the chemicals in safe conditions, this fact-sheet will focus on the following major requirement:

Secondary containment as a spill retention system



How to achieve this objective?

The secondary containment provides containment of liquid chemicals if the container leaks, spills, ruptures, etc., and prevents dispersion to other areas of the factory or to the environment.

The secondary containment can be either:

- A physical feature of the storage area (first and second pictures from the left)
- A stand-alone device (last picture)



Pictures 1 and 2 (from the left): secondary containment is a physical feature of the storage area. Picture 3 (right): stand-alone device to be used as a retention system.

Remark 1 – about the capacity of the secondary containment:

There are some recommendations on the capacity of secondary containment: “Appropriate secondary containment structures consist of berms, dikes, or walls capable of containing the larger of **110 % of the largest tank** or 25% percent of the combined tank volumes in areas with above-ground tanks with a total storage volume equal or greater than 1,000 liters and will be made of impervious, chemically resistant material.” *General EHS Guidelines, Hazardous Materials Management, IFC, April 30, 2007.*



Pictures 1 and 2 (from the left): too many chemical containers stored in a secondary containment (retention system not adapted). Picture 3 (right): wood pallets are not a secondary containment (no system to retain any leak or spill).

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Remark 2 – about the necessity to verify if chemicals are compatible if stored in the same secondary containment:

Only compatible chemicals can be stored in the same secondary containment in order to avoid the risk of contact between chemicals that may react together. See fact sheet “How to store chemicals? Part II” to understand how to identify chemicals not compatible.



Common non-compliances

Secondary containment not properly used

The chemical store was arranged with a hard-surfaced structure to serve as a secondary containment but there are too many chemicals stored in it:



Secondary containment too small

Based on the IFC reference for the capacity of the secondary containment, the retention system in the picture below is not adapted since the container is too small:



Containment walls broken and not repaired

The physical boundary is not preventing the dispersion of the chemical spill and no action was taken to fix this broken berm:



Good practices

