



Experts in Safety Matters Meet us on Stand FS68



 Made
 in
 Germany

- Understand the local regulations governing storage by the end user, this may involve asecos providing access to local experts on hazardous material storage, providing training to users Safety Managers, Risk Officers, Lab Managers and so on. The legislation will cover EU Directives, EN legislation, EN14470, Segregation Guidelines and Safety Data Sheets. For example in the UK there may be a need to train Safety teams on Dangerous Substances and Explosive Atmospheres Regulations, which is a legal requirement not only to have a risk assessment, but to have a chemical risk assessment. This is normally done by an external consultant.

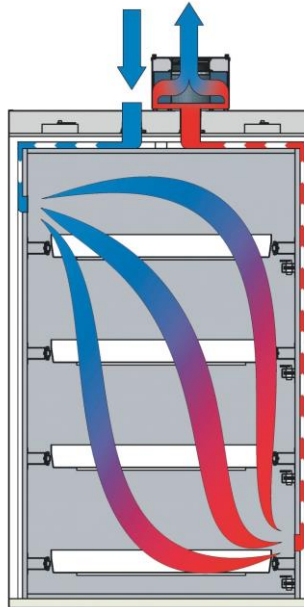
- Once all chemicals have been segregated according to in country guidelines such as HSG71, we can define the exact quantities and container sizes that are required to be stored. This leads to understanding which cabinets a user would need to procure. It is important at this stage to recognise that not all chemicals are required to be stored in fire resistant cabinets, new cabinets will need to be procured but where it is possible, the re-cycling of older metal cabinets can be used. Plans would need to be discussed for the extraction of all chemical storage cabinets.

-The next step would be to plan which cabinets would be more suitable, which extraction services would be required and where best the cabinets would be located. This can be quite a timely exercise especially with multiple sites and laboratories. I would like to point out that the majority of cabinets storing flammable liquids in the UK are single skin sheet metal cabinets, as and when the uptake of EN14470-1 fire resistant cabinets takes place, then as long as the older ones are cleaned and they consist of a lockable door and they meet the legal sump requirements; they can be recycled to store for example acids, bases and non-flammable chemicals. Regarding extraction, fume cabinets are designed to extract chemical fumes and gases from a process in a lab, consequently exactly the same fumes can build up in an under bench storage cabinet, so there is no reason why one would be extracted and not the other. A good extraction system on site will reduce the exposure of staff to potentially hazardous fumes and vapours.

-Once the cabinets have been delivered to site, user care and maintenance training will be required, provide training for site EHS and supervisors so everyone at a site understand the cabinets, how they operate and what happens in a fire. All of these elements combined together will provide the best possible solution for the storage of all hazardous materials.

Why should I extract?

In fact you will see that all BSEN14470 cabinets come ready for connection to extraction, this is quite simply to remove harmful vapours of even the most general chemicals. Flammables, Corrosives and many more when inhaled can inflict potentially long term damage on us as human beings. This is why glove manufacturers produce chemical resistant gloves, eyewear manufacturers produce chemical splash eyewear, and this is why cabinets used for storage need to be extracted. Chemical manufacturers produce detailed data sheets in most cases for all chemicals, they are clear in explaining to a user what hazards are present for the chemicals they are handling and what precautions a user should take.



Most chemicals in the workplace are stored according to GHS Symbol, as a demonstrated on the next slide there is a tendency to be over reliant on this form of segregation. In the UK we have a health and Safety Guideline HSG71 which offers excellent advice on the storage of chemicals according to the nature of those chemicals

In General we all understand that chemicals can consist of many GHS Symbols, when it comes to storage many labs focus on the most severe of effect of that chemical and that will control how the chemical is stored. This is the case with Acetic Acid where it is stored as a corrosive, however the flammable nature of the acid is more severe and thus many organisations store it separately as a flammable liquid. For example Hydrochloric, Perchloric and Acetic acids have been found to be stored with many other corrosives and flammables where separate storage may be required. Attention must be paid to compatibilities on the SDS

Example, I would like to explain that the GHS Symbol for Flammables the black flame on a white background with a red diamond, covers four families of flammable chemicals, Flammable Liquids, Flammable Solids, Flammable Solids Spontaneously Combustible and Flammable Solids Hazardous When Wet. These four families share the same symbol and at first glance you would assume they could be stored together, however, they cannot be stored together as you will see indicated on the documents 'HSG71 chart'.

Once all chemicals have been segregated correctly, volumes of chemicals and container sizes established we can make a suggestion on the cabinets that would be required.

As a footnote I would like to add that any person who comes into contact with a chemical in a workplace, has a duty to ensure that they are informed, as regards to the hazards presented by that chemical. The hazards are not secret and are clearly described on the SDS, you will see here guidance on how to interpret what PPE should be used, and how to store the chemicals to a point. However some data sheets supplied by Global Chemical Companies offer generic advice and it does not offer specific guidance country by country, at this point it is very important to ensure staff, laboratory employees, stores and safety teams have sufficient access to the SDS, a launch pad in understanding the correct measures to take in the event of Spill/ Accidental release, First Aid, Fire Fighting, Workplace Exposure Limits, Storage/ Handling , Compatibility, Classifications and much more.

CLASS		1	2		3	4			5		6	8	
Chemical Segregation By Chemical Group.													
Explosive	1.0 Explosive		Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Segregate From
Compressed gases	2.1 Flammable		Segregate From	Keep Apart	Segregate from or Keep Apart	Segregate From	Segregate From	Segregate From	Segregate From	ISOLATE	Keep Apart	Keep Apart	Keep Apart
	2.2 Non Toxic Non flammable		Segregate From	Keep Apart	Keep Apart	Keep Apart	Segregation may not be necessary	Segregate From	Segregation may not be necessary	Segregate From	Segregation may not be necessary	Segregation may not be necessary	Keep Apart
	2.3 Toxic		Segregate From	Segregate from or Keep Apart	Keep Apart	Segregate From	Keep Apart	Segregate From	Keep Apart	Segregation may not be necessary	Segregate From	Segregation may not be necessary	Keep Apart
Flammable liquids		Segregate From	Segregate From	Keep Apart	Segregate From	Keep Apart	Segregate From	Segregate From	Segregate From	ISOLATE	Keep Apart	Keep Apart	
Flammable solids	4.1 Readily combustible		Segregate From	Segregate From	Segregation may not be necessary	Keep Apart	Keep Apart	Keep Apart	Segregate From	Segregate From	Segregate From	Segregate From	Segregation may not be necessary
	4.2 Spontaneously combustible		Segregate From	Segregate From	Segregate From	Segregate From	Segregate From	Keep Apart	Keep Apart	Segregate From	ISOLATE	Keep Apart	Keep Apart
	4.3 Dangerous when wet		Segregate From	Segregate From	Segregation may not be necessary	Keep Apart	Segregate From	Keep Apart	Keep Apart	Segregate From	Segregation may not be necessary	Segregation may not be necessary	Segregation may not be necessary
Oxidising substances	5.1 Oxidising substance		Segregate From	Segregate From	Segregation may not be necessary	Segregation may not be necessary	Segregate From	Segregate From	Segregate From	Keep Apart	Segregate From	Keep Apart	Keep Apart
	5.2 Organic peroxide		Segregate From	ISOLATE	Segregate From	Segregate From	ISOLATE	Segregate From	ISOLATE	Segregate From	Segregate From	Keep Apart	Keep Apart
Toxic		Segregate From	Keep Apart	Segregation may not be necessary	Segregation may not be necessary	Keep Apart	Keep Apart	Keep Apart	Segregation may not be necessary	Keep Apart	Keep Apart	Segregation may not be necessary	
Corrosive		Segregate From	Keep Apart	Keep Apart	Keep Apart	Keep Apart	Segregation may not be necessary	Keep Apart	Segregation may not be necessary	Keep Apart	Keep Apart	Segregation may not be necessary	



OVERVIEW

<p><i>Storage of flammables</i></p>	<p>NOT SUITABLE Safety containers mandatory</p>	<p>SUITABLE Safety containers recommended</p>	<p>SUITABLE NO RESTRICTIONS</p>	
<p><i>Insulation</i></p>	<p>NO INSULATION</p>	<p>AIR INSULATION</p>	<p>FIRE RESISTANT BOARDS</p>	
<p><i>Certification</i></p>	<p>NONE</p>	<p>THIRD PARTY CERTIFICATION (FM 6050, UL 1275, e.g.)</p>	<p>EN 14470-1</p>	
<p><i>Fire resistance (Minutes)</i></p>	<p>0</p>	<p>10</p>	<p>30</p>	<p>90</p>
<p><i>Disaster risk</i></p>	<p>VERY HIGH</p>	<p>MEDIUM</p>	<p>LOW</p>	<p>NONE</p>
<p><i>Legal consequences and personal liability</i></p>			<p>EN GS FM</p>	
<p>NO SAFETY</p>		<p>MAXIMUM SAFETY</p>		

