



HSE  
Occupational Health & Safety  
and Environmental Protection unit

# Chemical Safety

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EDMS reference

# Toxics



T - Toxique



These substances can poison even at small doses, can pose a serious health risk, in the short or long term, and even result in death.

Examples: cyanides, methanol, asbestos, wood dust, mercury, lead, hydrofluoric acid....

- **Carcinogen** (asbestos, beryllium and certain of its compounds, tobacco smoke, wood dust, chromic acid, chromium VI...)
- **Mutagen** (chromic acid, bromine, benzene...)
- **Toxic to Reproduction** (lead and certain of its compounds, carbon monoxide, mercury...)

# Health Hazards



*Sensitizing agents:* cause a substantial proportion of exposed people to develop an allergic reaction in normal tissue after repeated exposure.

Sensitizing in case of skin contact, or respiratory sensitizers (asthma):

Examples: some glues, some epoxy resins, some fluxes used in welding/soldering...

*Corrosive substances:* in contact with living tissue, can have a destructive effect.

Examples: acids (nitric, hydrochloric, sulphuric, hydrofluoric) bases (sodium hydroxide), some glue hardeners..

# Reactive chemicals



O - Comburant



Oxidizing agents - substances which can provoke or aggravate a fire, or even provoke an explosion, if in the presence of flammable materials.

Examples: halogens, oxygen, hydrogen peroxide, sodium hypochlorite, nitric acid..



E - Explosif



Substances which can explode in contact with a flame, a spark, static electricity, heat, shock...



F+ - Extrêmement inflammable



Flammable substances (solids, liquids, gases..)

Examples: flammable gases (methane, isobutane, hydrogen); flammable liquids (ethanol, acetone); certain metals in the form of dust, sodium, potassium...

# Others



N - Dangereux pour l'environnement



Dangerous for the environment

Examples: Solvents, glues, paints, hardeners, biocides/pesticides..



Pressurised gas



# Where to find information



**GHS labels**  
(new pictograms)

FIGURE 1- EXAMPLE LABEL FOR ACETONE ACCORDING TO THE CLP REGULATION

**ACETONE**



Company ABC  
Alphabet Drive  
Derbyshire,  
Burton-on-Trent  
01283 1234567

**Danger**

H225: Highly flammable liquid and vapour. H319: Causes serious eye irritation. H336: May cause drowsiness or dizziness. Repeated exposure may cause skin dryness or cracking.

P102: Keep out of reach of children. P403: Store in a well-ventilated place. P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER or doctor/physician.



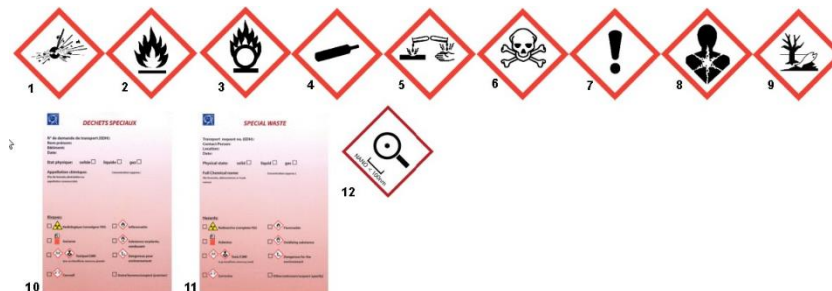
# Where to find information

Labels

CERN Stores



SCEM : 19.19.35



SCEM : 50.55.20

	<b>ASOREL</b> PROPRE CHIMIE INDUSTRIELLE
	50 - Nocif 50 - Nocif
<b>Phrases R:</b> R 53-55-56 Peut entraîner des effets néfastes à long terme pour l'environnement aquatique May cause long-term adverse effects in the aquatic environment Nocif : Peut provoquer une atteinte des poumons en cas d'ingestion Harmful : may cause lung damage if swallowed L'exposition répétée peut provoquer dessèchement ou gerçures de la peau Repeated exposure may cause skin dryness or cracking	
<b>Phrases S:</b> S 24 Eviter le contact avec la peau Avoid contact with the skin	
N° O.F.S.P. : --	
Classe de Toxicité Inhalée	

# Where to find information



Safety data sheet  
(SDS or MSDS)

1. Chemical Product and Company Identification
2. **Hazards Identification**
3. Composition, Information on Ingredients
4. First Aid Measures
5. Fire Fighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Controls, Personal Protection
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicological Information
12. Ecological Information
13. Disposal Considerations
14. Transport Information
15. Regulatory Information
16. Additional Information





# Rules



As an intergovernmental organisation, CERN establishes its own safety rules as necessary for its functioning taking into account relevant Host States, as well as European and International regulations and standards.



Safety Regulation SR-C

# Hazards in the vicinity

Outside Building 157

**Flammable gas bottle storage – The EX sign on the small panel indicates the potential presence of an explosive atmosphere. Warning sign (flashing light & audible alarm) for Flammable gas release outside building 157**



# Hazards in the vicinity

Inside Building 157

Mixed Chemical storage inside the chemical laboratory for the CLOUD Experiment





# Hazards in the vicinity

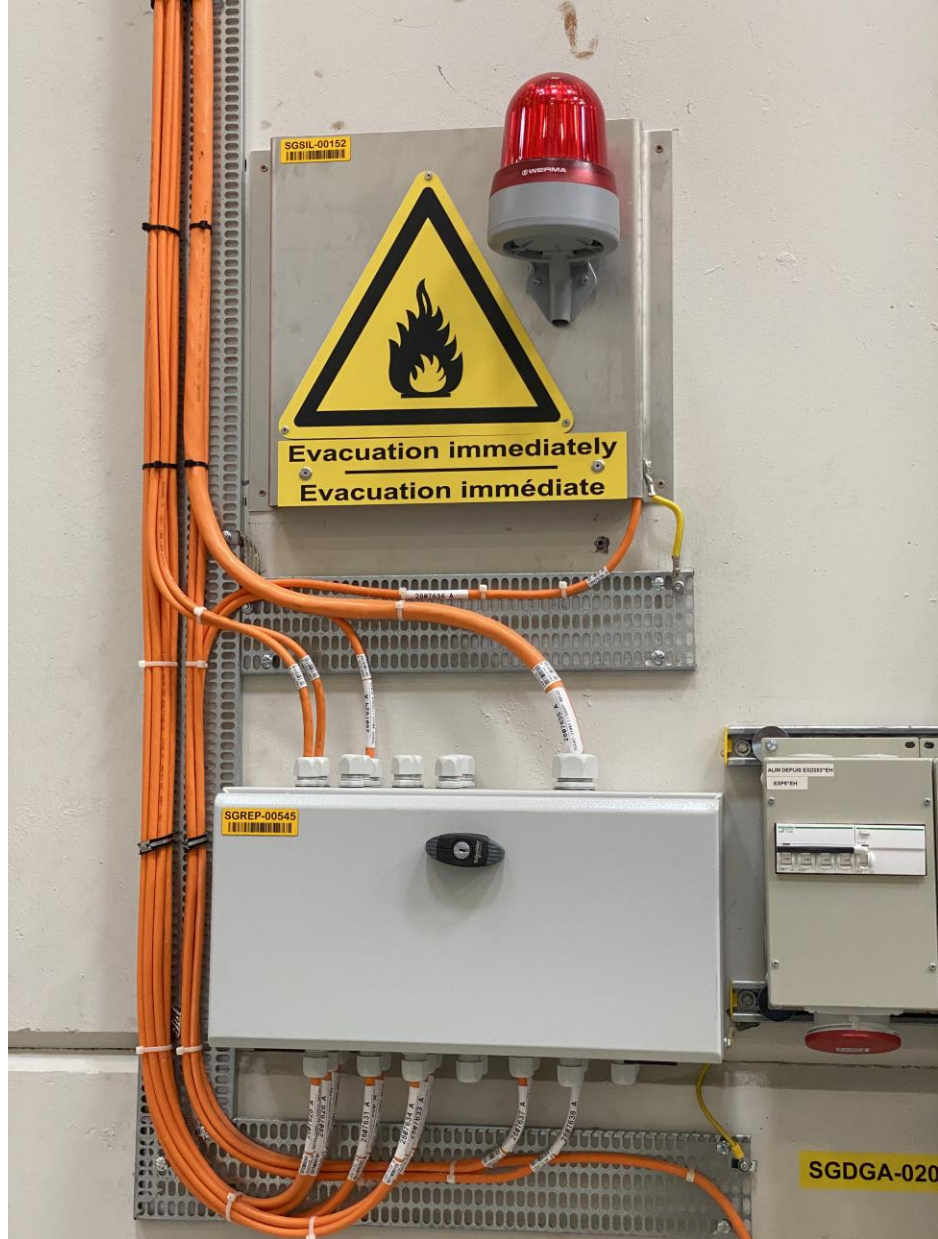


Inside Building 157

Warning signs (flashing light & audible alarm) for Toxic and Flammable gas release inside the CLOUD Experiment



Warning sign (flashing light & audible alarm) for Flammable gas release outside the T09 Zone





[www.cern.ch](http://www.cern.ch)