BG ETEM
Energie Textil Elektro
Medienerzeugnisse

Workplace Instruction –
Workplace

Flammable liquids

Working with dangerous substances II
Guidance for safety briefing

Your statutory accident insurance

Hazards and risks involved by working with flammable liquids

Facts

Under certain conditions the flammable liquids have the property to combine with the surrounding air to form a combustible mixture. Upon ignition, the liquid will continue to burn independently.

Within the BG ETEM member companies, flammable liquids, for example, are used in diverse washing and cleaning agents.

Tip

The training to become a fire protection assistant brings a well-grounded base of knowledge and skills for effective fire prevention.

What are flammable liquids?

Liquids are flammable, when the vapours mixed with air get inflamed by a source of ignition.

Examples of flammable liquids can be:

- Cleaning agents for rollers, rubber blankets, etc. (e.g. printing sector)
- Diluting agents and special cleaning agents
- Degreasing solvents
- Ethanol
- Acetone
- Isopropanol (propan-2-ol)

How are hazardous substances identified?

A working material is considered to be a hazardous substance when its use can impair the health of humans. Hazardous substances are identified by hazard pictograms and signal words, as well as hazard and precautionary references among other methods. Signal words are dependent on the degree of risk. These can be „Warning“ or „Danger“.

1. Product Identifier
2. GHS pictograms with signal words and hazard statements (H statements)
3. Precautionary statements (P statements)
4. Supplier Information
5. Filling capacity

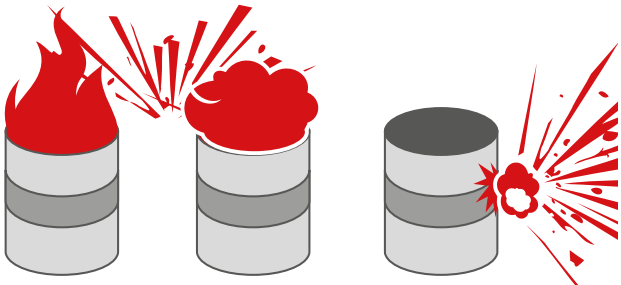
Since 2015, CLP regulations stipulate the use of a uniform set of pictograms:

What are the risks?

Every solvent evaporates more or less into the surrounding atmosphere. Depending on the vapour pressure and temperature, a potentially combustible or explosive vapour-air mixture can form, which can combust when exposed to a source of ignition.

The difference between a fire and a deflagration or an explosion exists in the speed of the reactions taking place:

- A fire is a relatively slow chemical reaction.
- A deflagration or an explosion is an extremely rapid chemical reaction.



Fire | Sudden blaze | Explosion

How to protect yourself

- **Observe the operating instructions**
- **Obey smoking bans**
- **Reduce the amount used, where possible**
- **Maintain only a needs-based supply of hazardous substances**
  Keep in store only the quantity required for a particular shift at the workplace. Unused supplies should be maintained in the hazardous substance storage facility.
- **Use solvents with a high flash point**
  The flash point for solvent-based products should be as high as possible (above 60 °C).
- **Ventilation measures**
  Use the measures available for ventilation, such as aspiration and room ventilation systems
- **Be consistent in using personal protective equipment.** This includes:
  › Observing the hand and skin protection plan
  › Wearing personal protective equipment (e.g. protective gloves and goggles)
  › A strict ban on eating, drinking, smoking and gum-chewing, as well as an ordinary cold while working with hazardous substances
- **Conduct in case of danger**
  The instructions regarding proper conduct in case of danger and regarding first aid must be observed.

Pay attention to safety signs and use personal protective equipment!

No open flame | Safety gloves must be worn | Do not use the elevator in case of fire | Eye protection must be worn

Warning about explosive atmospheres | Respiratory equipment must be worn | Warning about flammable substances

Dangers when working with flammable liquids with designation of risk

	Hazard pictogram: Signal word: **Danger** Hazard statement: **Highly flammable** **Extremely flammable** 	Hazard pictogram: Signal word: **Warning** Hazard statement: **Flammable** 
Properties	• Highly flammable (H 225): Flash point ‹ 23 °C, Boiling point › 35 °C • Extremely flammable (H 224): Flash point ‹ 23 °C, Boiling point ≤ 35 °C	• Flammable (H 226): Flash point ≥ 23 °C to ≤ 60 °C
Risks	Fire or explosion; under some circumstances even just below room temperature	• Fire hazard • Combustion at room temperature (vapour-air mixture) is unlikely with a flame point ≥ 40 °C, insofar as the liquid is not sprayed and no warm surfaces with temperatures close to the flash point are in the vicinity. • Combustion of cleaning cloth possible (wicking action)
Examples	**Printing sector** • Ink solvents • Cleaning solvents (industrial spirits) • Isopropanol (dampening solution) • Ethanol (film cleaner) **Cleaning sector** • Degreasing solvents (hydrocarbon mixture) • Ethanol **Cleaning of optical lenses** • Acetone • Ethanol, Isopropanol (propan-2-ol) **Shoe repairs** • Polychloroprene-based adhesive • Halogenating agents	**Printing sector** • White spirits • Roller and rubber blanket cleaning agents

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Flammable liquids
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