

Filling of hazardous substances

Training tool for safety instructions



Notes

Topic:

The purpose of this safety instruction is to address essential aspects for safe filling of with hazardous substances.

- Work on filling equipment may only be carried out by employees who are qualified and instructed. Filling of canisters, drums, IBCs, sacks or big bags may only be carried out in a dedicated area where spilled substances can be contained. Check all equipment used for signs of damage, wear or malfunction. Report any defects to the supervisor immediately. If in doubt, do not continue working (Lesson 1).
- Ensure safe logistics during filling and transportation (Lesson 2).
- Depending on which technical extraction device is used on site, e. g., external extraction or integrated extraction, the respective procedure must be specified in the company-specific instruction. Cleaning work must be carried out regularly. The type and frequency of cleaning must be specified in the operating instructions. Leaked, splashed or spilled products must be absorbed immediately, if necessary, with a suitable binding agent. Binders and cleaning agents with which organic liquids have been absorbed must be placed immediately after use in approved collection containers, which must be kept closed at all times. Depending on the activity and information in the safety data sheet or the operating instructions, the prescribed personal protective equipment must be worn (Lesson 3–5).
- When filling flammable liquids, the respective protective measures must be specified depending on the zoning carried out (Lesson 6).
- To avoid chemical reactions during filling operations, contamination of the work equipment used must be excluded. The containers must be correctly labelled so that the products they contain can be clearly identified (Lesson 7).
- The procedure in case of leakages and emergencies must be planned, communicated, trained through exercises and adhered to in case of emergency (Lesson 8).

For some more information, e. g. the explanation of the pictograms that identify hazardous substances, have a look at the [issa chemistry media shop](#).

Method:

This training tool is not to be used for E-learning. The set of slides is intended to assist managers for the personal instruction of employees and to start an open discussion on the topic of occupational safety.

Text and images included in the lessons provide information on which aspects are most important to the topic. Using this as a basis, discussions should be held on whether and where similar issues occur at the company in question, which specific technical and organisational measures are already in place, and which solutions could improve the situation. Safety instructions can thus be used not just to fulfil legal requirements but also as a tool for promoting ongoing improvement within the company.

Analysing thematically related events and “near misses” at the company (or other incidents known of from literature) can help the staff involved become aware of the relevance of the topic and thus encourage safety-conscious conduct for the long term. This may require further preparation and/or research.

Also included is a picture that can be used to check what has been learned. This can be carried out either with the whole group straight after the training session using the solution slides, as an independent follow-up activity with the solutions revealed at a later stage, or as part of an in-house (safety-themed) event, possibly with prizes.

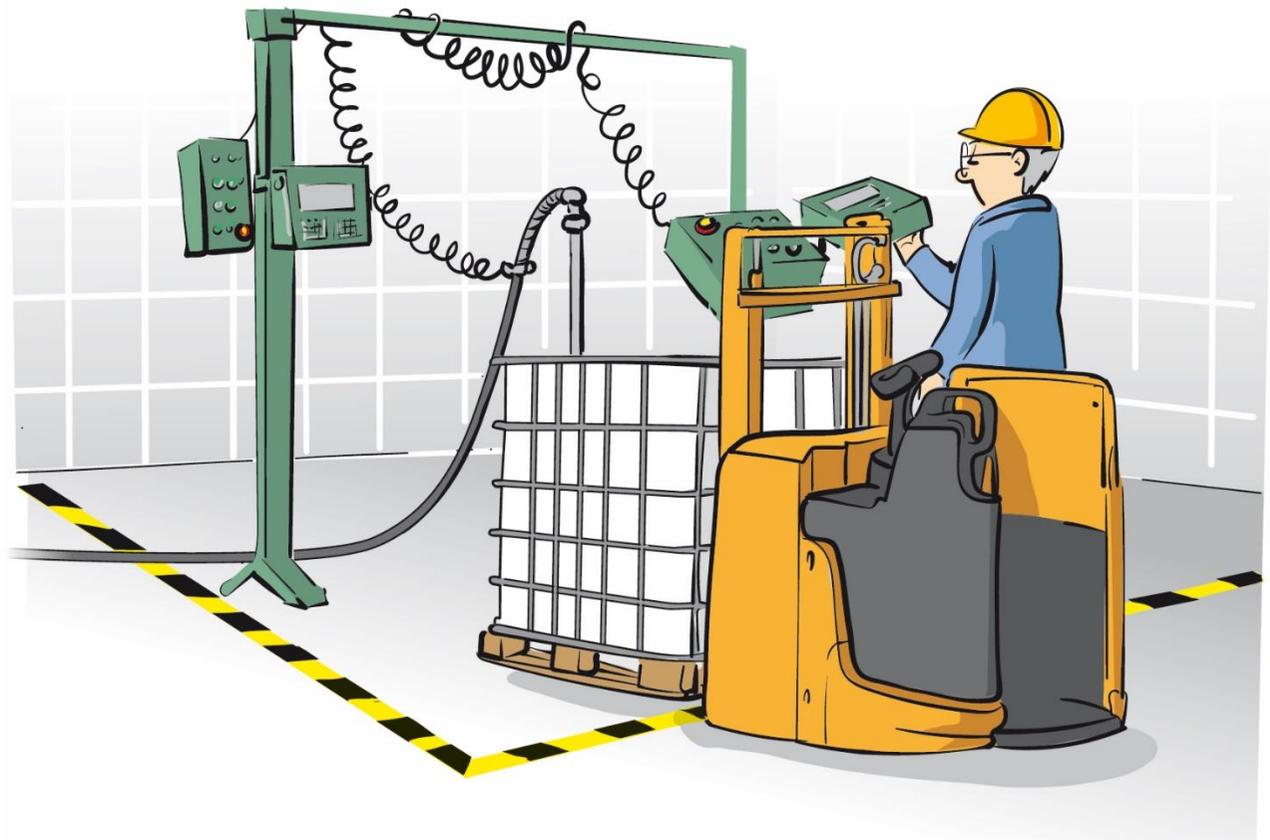
The content of the safety courses is always focused on the staff involved. They therefore do not include information on measures to be undertaken by the employer.



Lesson 1

Request briefing and follow instructions

- Filling only by instructed and authorised persons
- Filling only in designated and equipped areas
- Filling only in approved and labelled containers
- Check containers and filling equipment for damage

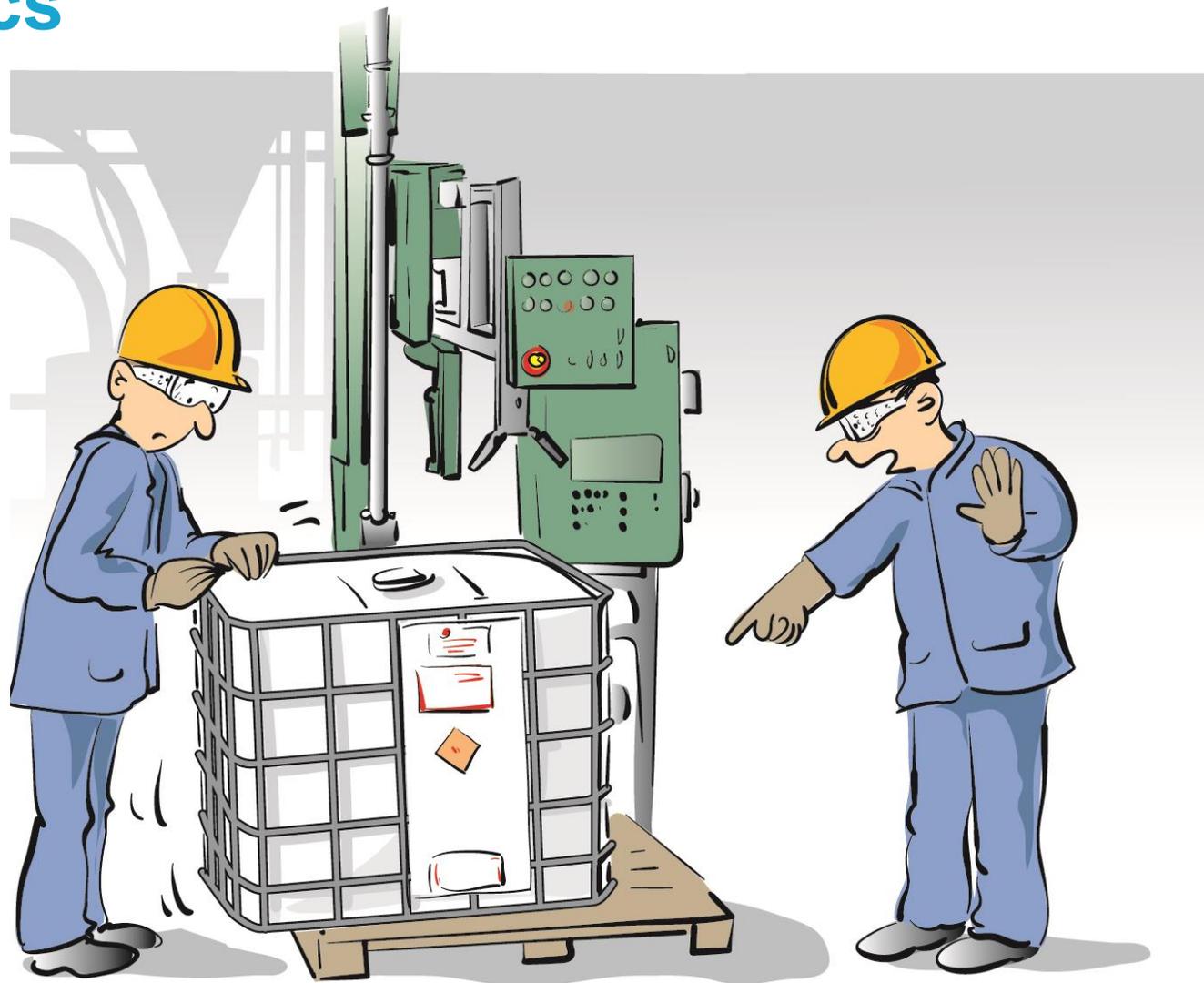




Lesson 2

Ensure safe logistics

- Ensure containers standing safely during filling
- Use suitable means of transport to ensure that containers do not tip over





Lesson 3

Avoid inhalation and skin contact

- Wear required personal protective equipment
- Do not touch lances containing product

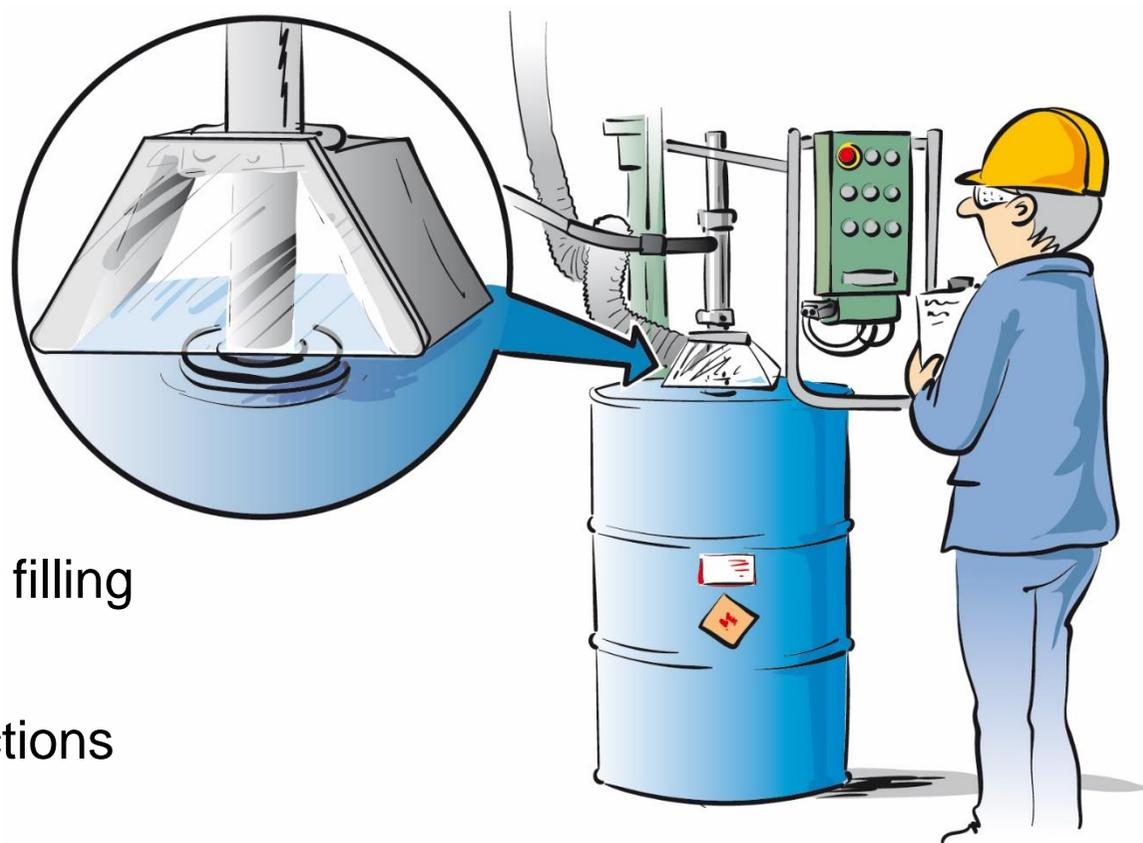




Lesson 4

Avoid release of liquids and vapours

- Position local exhaust ventilation as close as possible above the filling opening, insert sight glass according to instructions
- Immerse lance in liquid
- Monitor prescribed filling quantity
- Close containers immediately after filling
- Collect and dispose of leaked or spilled product according to instructions





Lesson 5

Avoid release of solids and dusts

- Position local exhaust ventilation as close as possible above the filling point
- Avoid dust generation
- Monitor prescribed filling quantity
- Close bags immediately after filling
- Collect and dispose of spilled products according to regulations

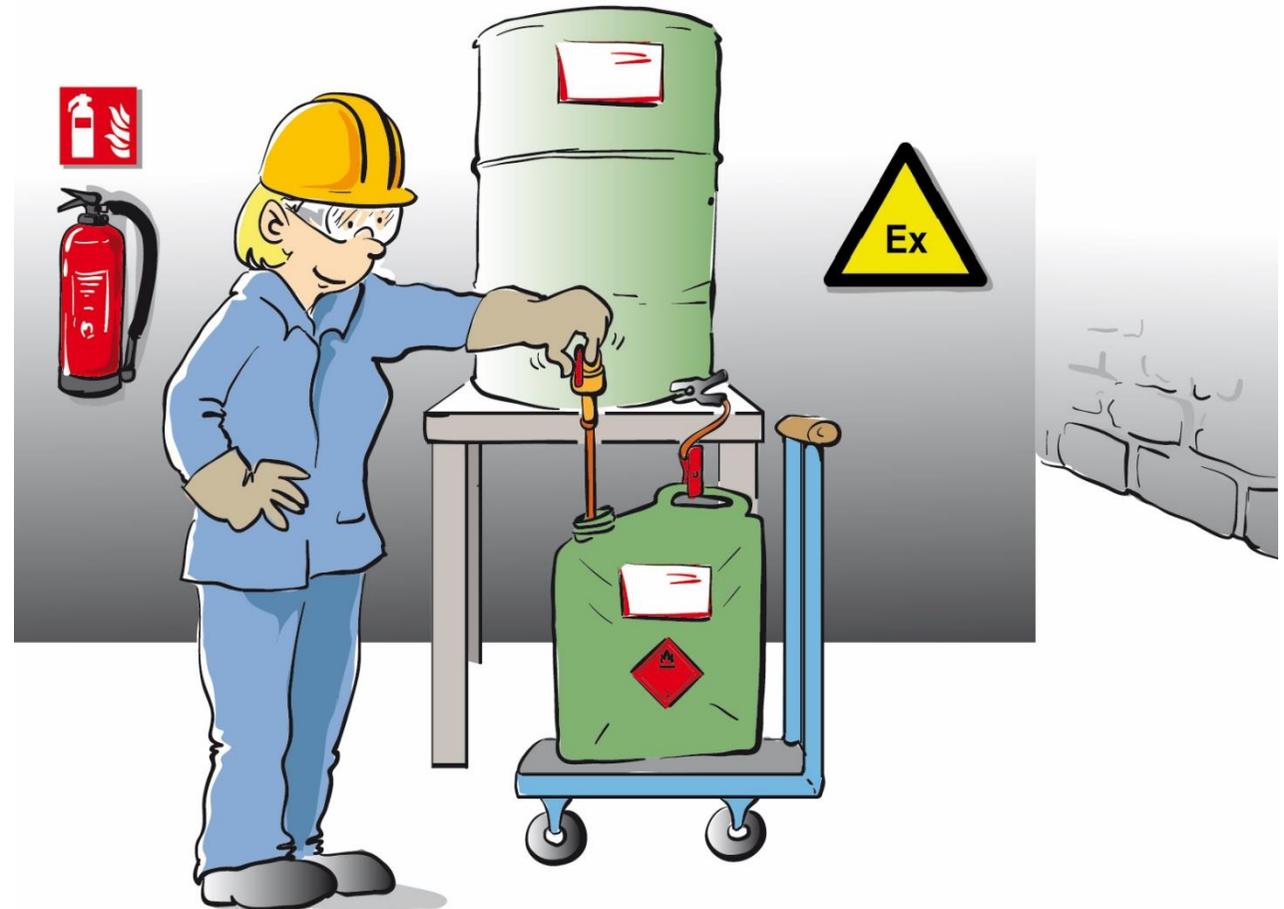




Lesson 6

Avoid fire and explosions

- Ground according to instructions
- Inert according to regulations
- Use only approved containers and explosion-proof work equipment
- Avoid sources of ignition: do not smoke





Lesson 7

Avoid chemical reactions

- Check identity of substances, do not mix
- Check cleanliness of containers
- Check labelling of containers





Lesson 8

Spills and emergencies

- Know emergency procedures and escape routes
- Know how to use fire extinguishing equipment and first aid facilities
- Communicate spills
- Wear required personal protective equipment





What's wrong? Find the eleven mistakes

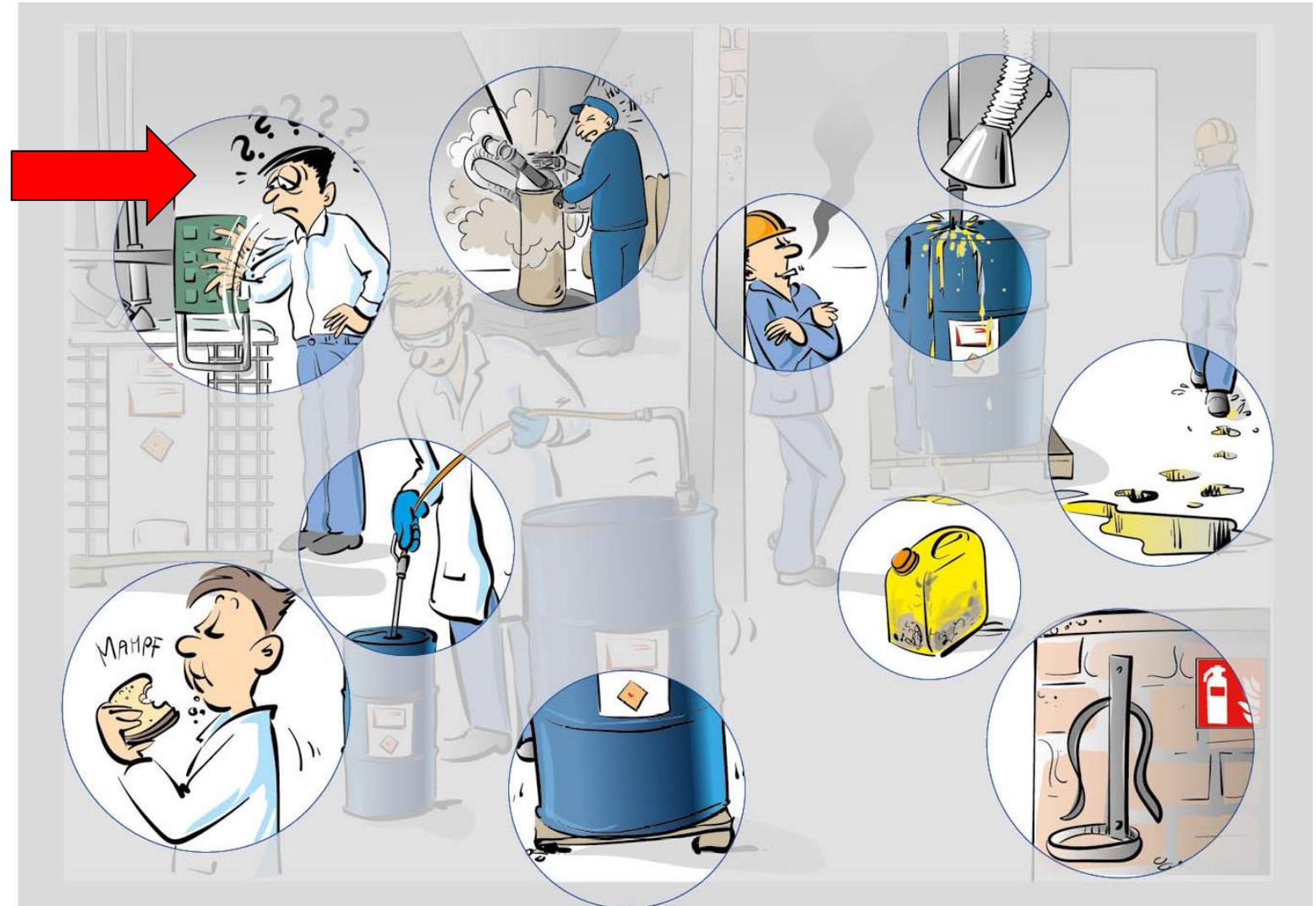




Mistake 1

Filling only by instructed and qualified persons

Wear required personal protective equipment

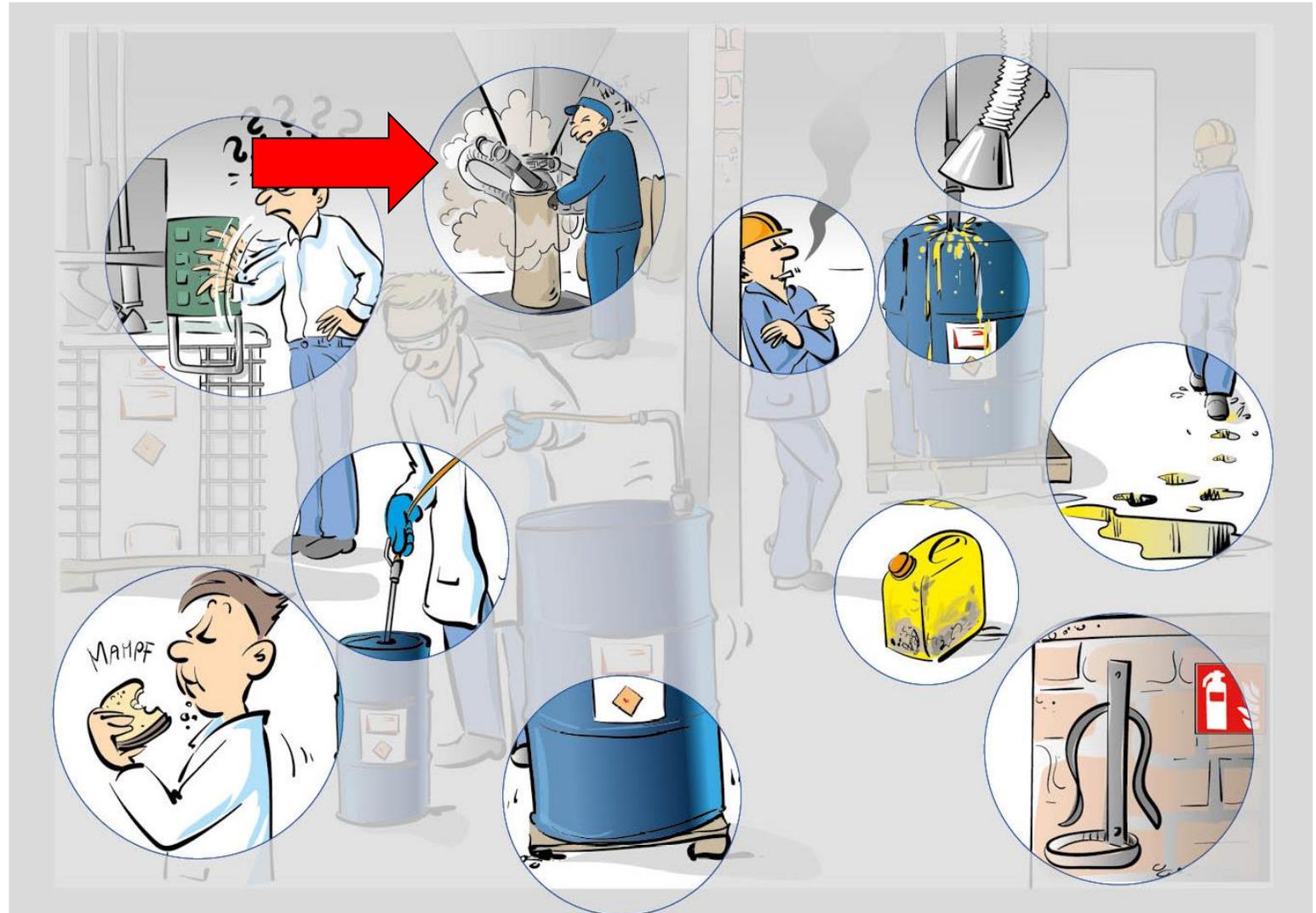




Mistake 2

Avoid dust formation

Vacuum dust
at source





Mistake 3

Do not eat or drink
in the filling area

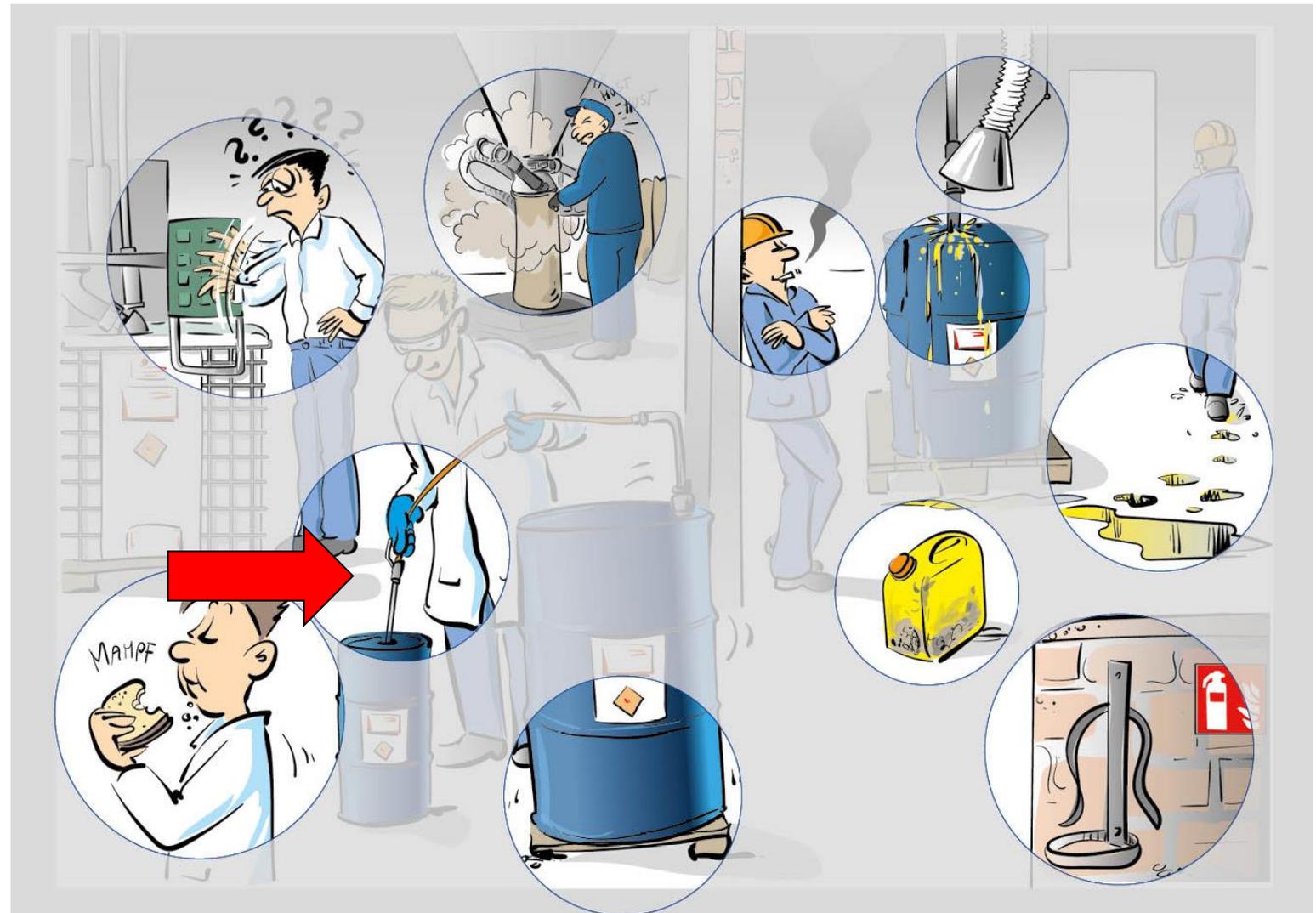




Mistake 4

Do not touch parts contaminated with product

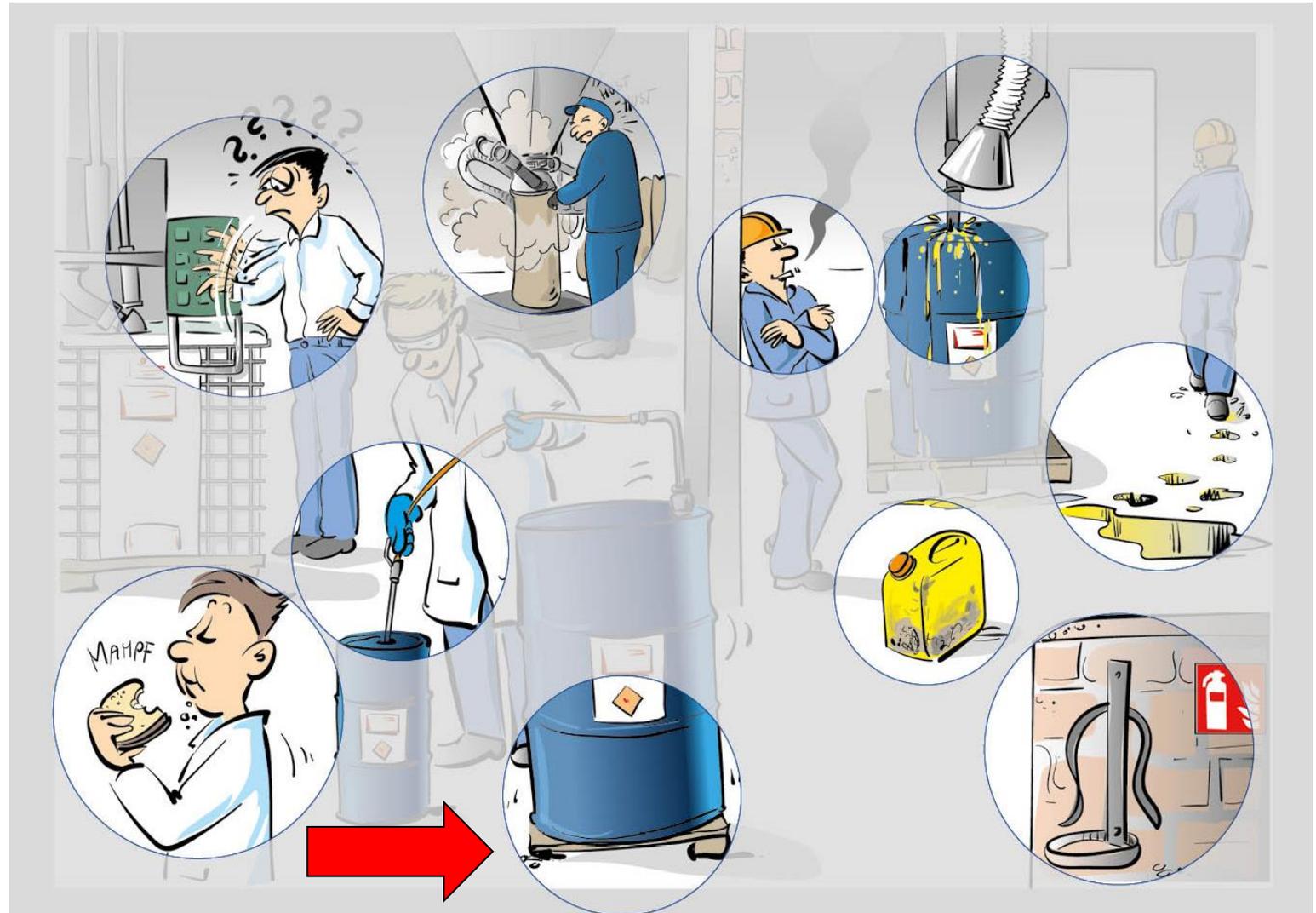
Immerse lance as deeply as possible





Mistake 5

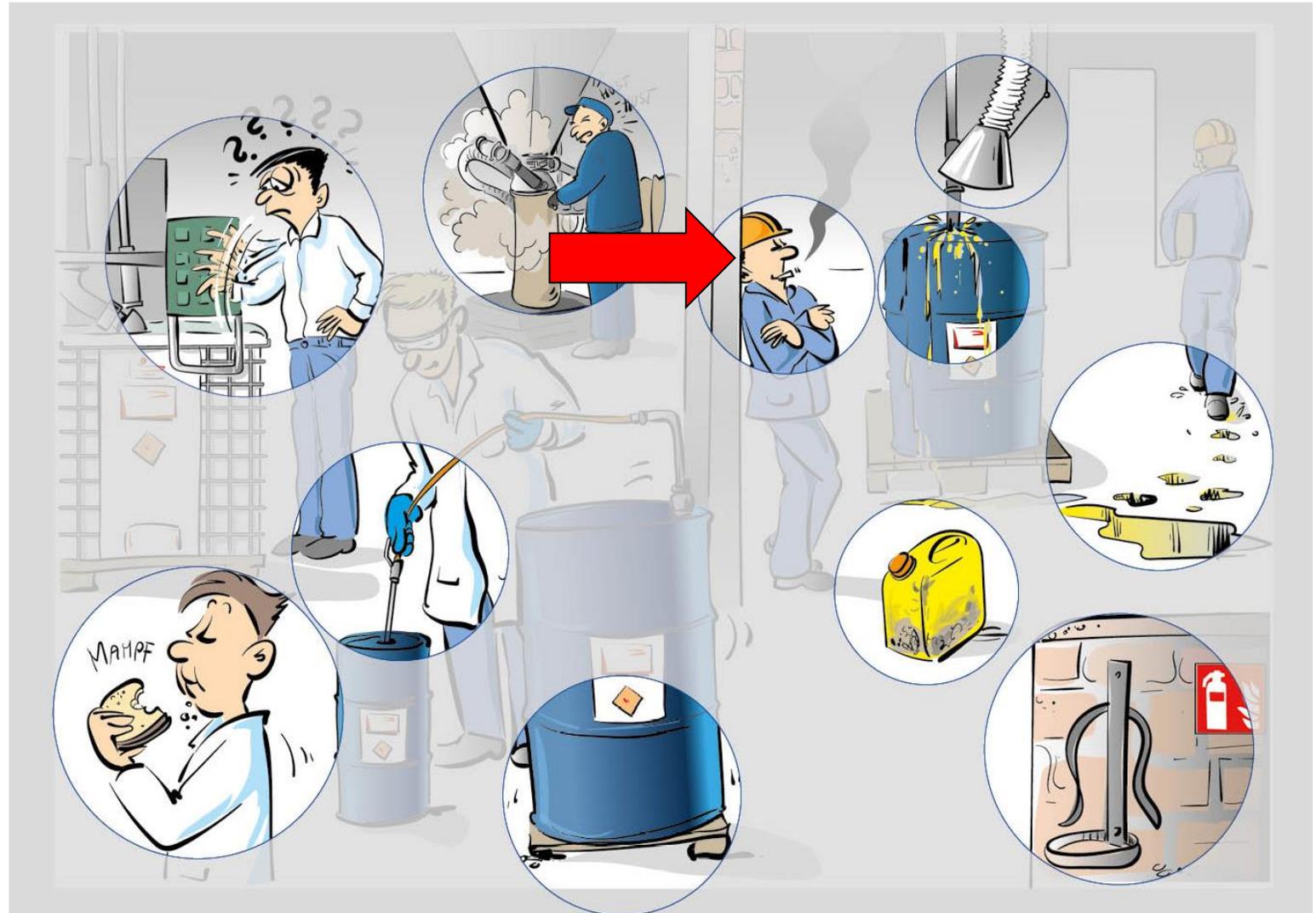
Ensure that containers are in a safe position





Mistake 6

No smoking
in the filling area

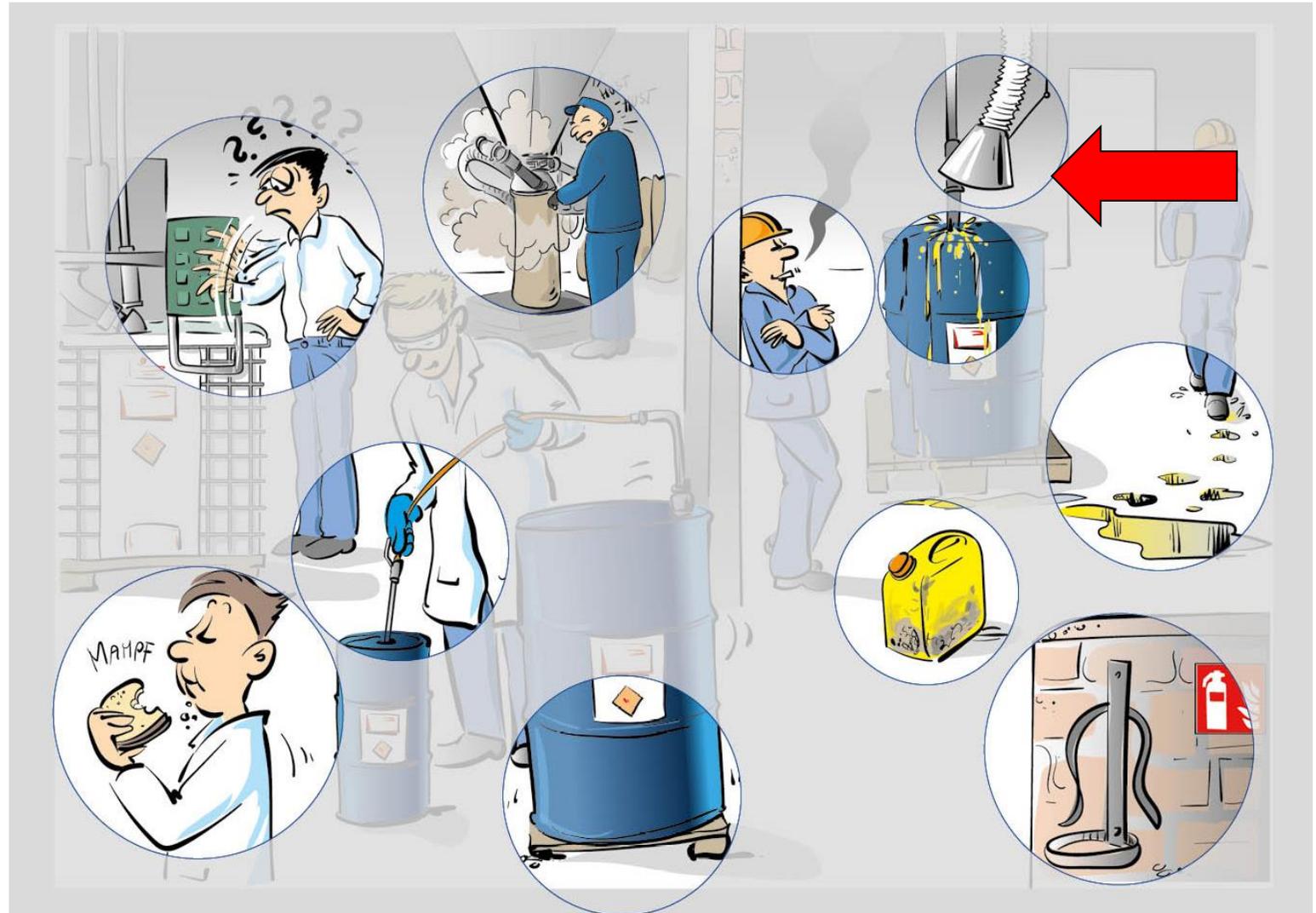




Mistake 7

Position suction properly

Use flange suction instead of hood suction if possible

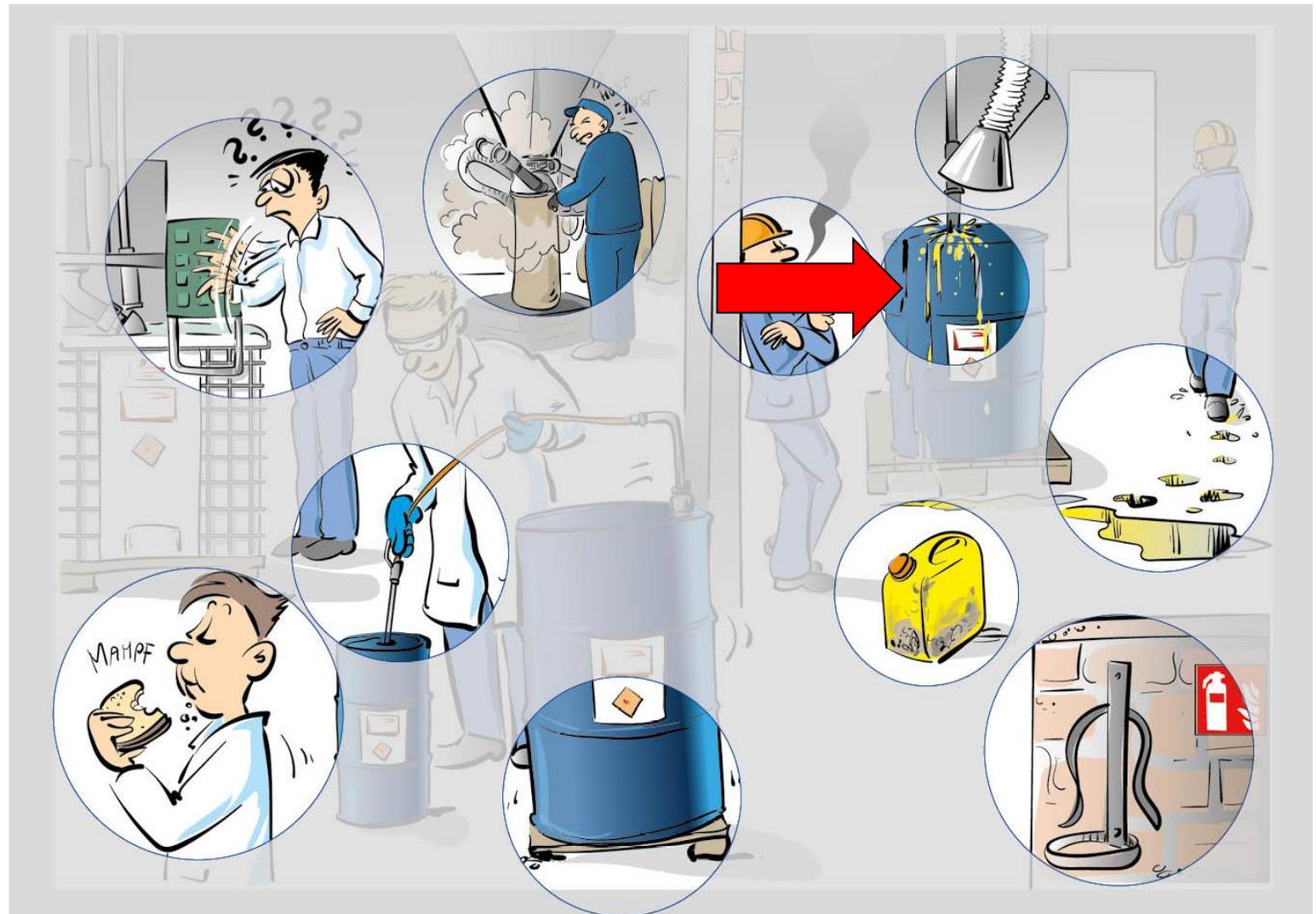




Mistake 8

Avoid overfilling

Ensure that
the containers
are clean

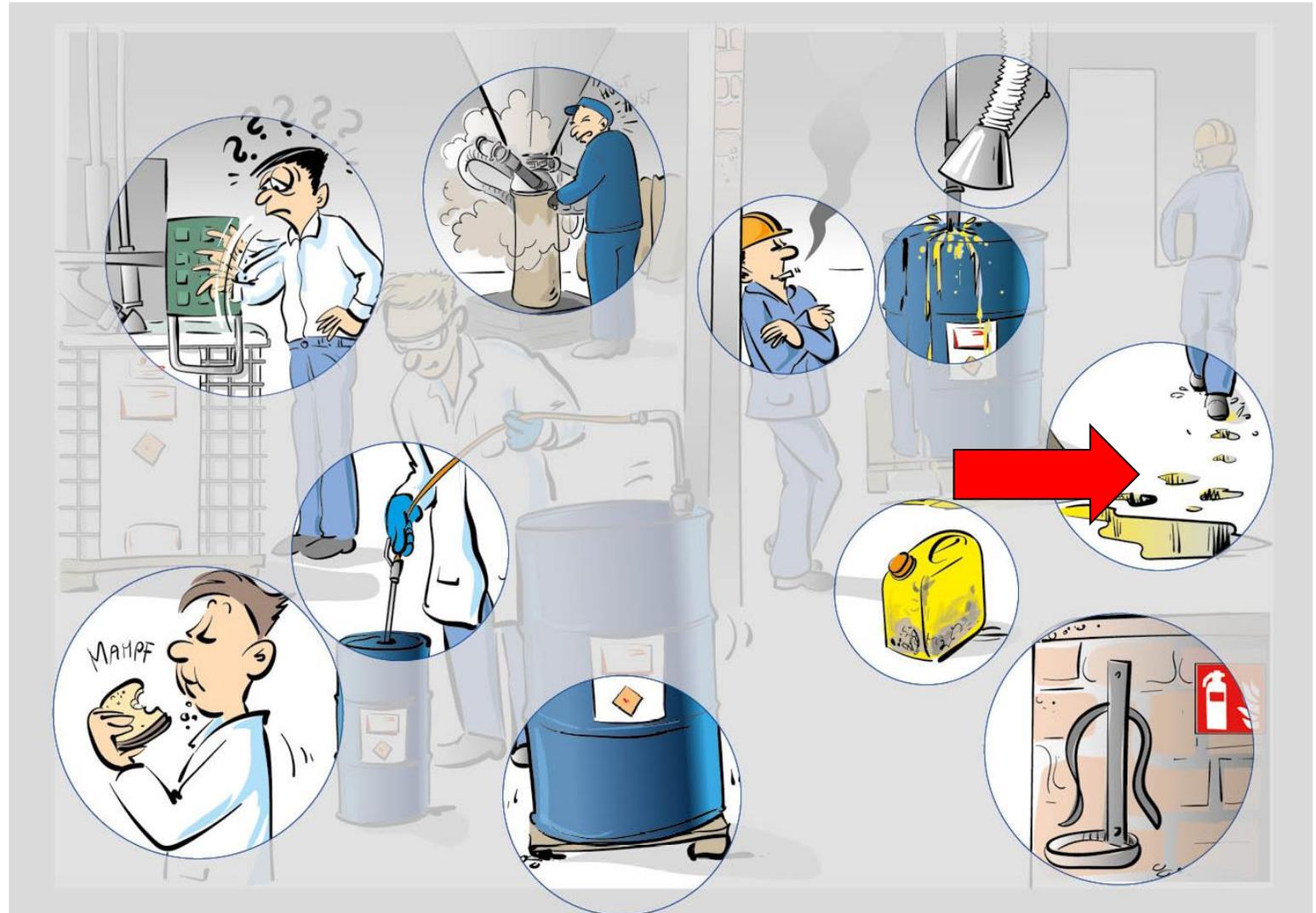




Mistake 9

Remove leaked products immediately

Avoid carry-over of products

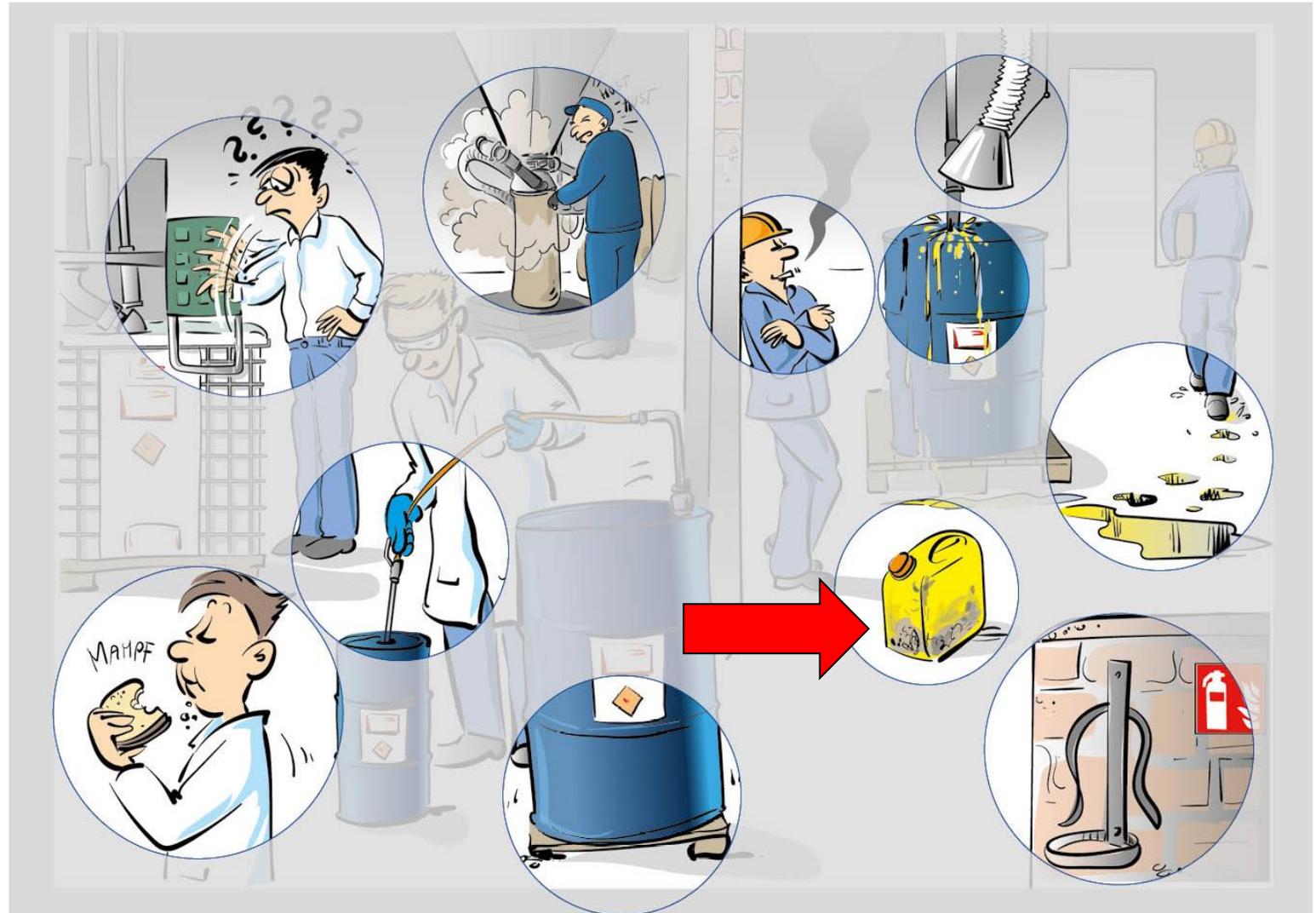




Mistake 10

Do not place
containers in traffic
routes

Ensure clear labeling





Mistake 11

Keep fire extinguishers as well as other emergency and first aid equipment available

