


<b>SAFETY INSTRUCTIONS 20</b>  <b>Risk of contact with acids/bases</b>	  Balen/Pelt
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## SAFETY INSTRUCTIONS 20

### Risk of contact with acids/bases (lye)

 nyrstar

Balen/Pelt

## 1 PURPOSE

If work is carried out in an environment where there may be contact with acid or alkali, a number of precautions must be observed.

## 2 SCOPE

When working in an environment with possible contact with acid or base.

## 3 DEFINITIONS

Bumb: Buffersolution for Mobile treatment of Chemical Burns

Strong acids: > 250 grams of acid per litre (e.g. sulphuric acid, hydrochloric acid)

Strong bases: Ph >12 (e.g. NaOH, (un)slaked lime)

## 4 PRESCRIPTION

### 4.1 Work with strong acids or bases

If work is carried out on pipes or containers that **contain or have contained strong acids or bases**, control measures must be formulated on the basis of a task risk analysis.

The following measures apply to the first opening of a pipeline.

Before starting the work, the locking sheet must be checked for correctness on site by the locking planner of the issuing service.

Position:

- If it can be demonstrated that the pipes or receptacles are empty and no more liquids can be released, at least a Tychem-C disposable coveralls with face shield and [chemical goggles](#) should be used at first opening. Acid-resistant gloves should be worn in which the connection between Tychem-C suit and gloves is made impenetrable and rubber boots [under the trouser legs](#), in order to have sufficient protection against residual acid, lye.
- If it is not possible to prove that the pipes or containers are empty and that no more liquids can be released, a full acid suit (type 3-4 with full body protection according to Ansell 4000 [type 111](#)) with [face shield and chemical goggles](#), [acid-resistant gloves with impermeable to the suit](#) and rubber boots should be used for the first opening. If subsequent respiratory protection is required, a suitor suit with rubber rim (e.g. Ansell type 4000 -151) is used to ensure a good fit with the full face mask (e.g. type MSA 3S) or model with external air connection (e.g. Ansell type 4000 avant 2 airline model 756) depending on the level of protection required.

For other tasks (no initial opening of a pipe) where strong acids or bases may be released and/or where contact with strong acids or bases is possible, the specific PPE should be determined on the basis of a risk analysis.

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#### 4.2 Work with light acids or bases

When carrying out work on an installation with **light acids or bases**, the following requirements must be observed:

- Wearing acid-resistant clothing that complies with the EN 13034 type 6 standard (e.g. Tecasafe workwear)
- Suitable hand protection
- Close-fitting safety goggles
- Before the first opening of a pipe, a face shield must also be worn

#### 4.3 Additional points of attention (both for strong and light acids or bases)

If collective protection measures are possible in combination with the measures described above, this is preferred.

It should also be taken into account that process fluids and sludges can be hot (up to 110°C).

Wear the safety equipment, even when working on acid pumps or acid taps in the workshop.

In addition to the use of the prescribed PPE, one should always have access to BUMB solution in the immediate vicinity when working where there is possible contact with strong acid or strong bases.

## 5 PROCEDURE FOR OPENING A FLANGE

The procedure is described in work instruction: [XW-531-TI-T-90001](#) **Loosening flange connections for (strong) acids and bases**

## 6 BUMB



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BUMB is an emergency shower that will neutralize very strongly in the event of burns caused by acids, bases. It may also be used to cool ordinary burns. This product can be used on both skin and eyes.

Where to buy:  
Occupational Health Service (BGD)  
In the production departments

After use, these bottles must be refilled with BUMB. This can be done on the Industrial Navigation

**2 golden rules for chemical burns:**

1. Burn = rinse thoroughly with BUMB
2. **After** rinsing with BUB, rinse with (running) water for 30 minutes

**BUT: Prevention is better than cure!**