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| SAFETY REGULATION VV14 |  |
| Rinsing - cleaning | |

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1 PURPOSE

When rinsing and cleaning including high-pressure cleaning, environmental pollutants must also be taken into account in addition to the hazard aspect.

2 SCOPE

The requirements of this safety regulation apply to the premises of Nyrstar Belgium.

The requirements apply to:

- performing high pressure spraying work with small equipment (< 10 kW motor power at pressures > 25 bar).
- cleaning with chemicals

The rule shall not apply:

- on the use of high pressure equipment with a power > 10 kW at pressures > 25 bar.
- use of pressures greater than 250 bar

In these cases, the guidelines of the Industrial Cleaning Foundation (S.I.R.) must be followed.

3 DEFINITIONS

TRIE: Task risk inventory and evaluation

High pressure spraying: application of high pressure equipment inside

4 PRESCRIPTION

4.1 Spraying work

4.1.1 Training and instruction

High-pressure spraying work may only be carried out by personnel who have been demonstrably instructed. The instruction should include: the safe handling of high-pressure equipment in general and the safe execution of the task-specific work. The requirements in this regulation are part of the instruction.

Points of attention are:

- The sprayer must always be able to interrupt the jet in a safe manner.
- The work pressure may not be set higher than is necessary for the work;
- When spraying out pipes, one must take into account contamination on the other side of the pipe (also sufficient deposits!)
- When retrieving, one should pay close attention to the marking of the nozzle;
- Make arrangements to deal with the risks of using a creeper hose which can be inadvertently squeezed back in the event of dirt accumulation;

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4.1.2 Requirements for the design of the workplace

- The spraying area must be clearly demarcated (at least 6 meters from the nozzle, this should also include platforms / work floors above and below the spraying place) if the distance is less than 6 meters, the environment must be shielded so that the environment no longer suffers from splashing dirt or mist. This may be deviated from if a TRIE has been drawn up for this purpose.
- Electrical equipment must be shielded within this deposit;
- The work floor must be non-slip, draining and free of obstacles to prevent slipping or tripping;
- When spraying from a scaffolding, it must be built for this work.
- The objects to be sprayed must not move unintentionally. One may never stand on a separate piece of work;
- During work with multiple sprayers, the distance between two sprayers must be at least 6 meters;
- A maximum of one sprayer may operate in a confined space;
- When working in an ex-zone, the safety regulation VV16 - working in ex-zones must be taken into account;

4.1.3 Requirements for the equipment

The equipment used must be in good condition and be part of a periodic inspection and maintenance program that ensures the maintenance of a good condition.

Before the start of the works, the operators of the works check the equipment for visible defects (e.g. defective cable, hose, couplings).

The hose couplings must be equipped with a breakage protection.

4.1.4 Personal protective equipment

- Hearing protection
- Face shield and safety glasses, in combination with safety helmet;
- Respiratory protective equipment in case of danger of inhaling (dangerous) substances. Type should be recorded in the TRA.
- When using pressures > 150 bar: high pressure safety spray boots. For short-term interventions, safety shoes with metatarsal protection are sufficient
- Waterproof spray suit with hood and tight-fitting cuffs are recommended
- Waterproof gloves with grip low on the inside are recommended

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4.1.5 How to act in case of injuries

The risk of high-pressure spraying is that a jet of water hitting the body outwardly causes only a minor injury but can cause major damage internally. Therefore, alertness is required and particular attention should be paid to injuries.

- Any injury caused by high-pressure liquid, no matter how small, should be treated immediately by our Medical Department. Outside the hours that the Medical Department is occupied, a victim should always be taken to the emergency department of a hospital.
- Nyrstar's first aiders have received instructions on high pressure spray wounds. There is an information protocol that is given with the victim if one goes to an emergency department for care. [XW-435-VI-0-00025](#)

4.2 Cleaning with chemicals

In the case of acids, alkalis and the use of other chemicals for cleaning equipment, detailed regulations, e.g. a Risk Inventory and Evaluation Task (TRIE) should be drawn up in which attention is paid to the following aspects:

- Properties and handling of substances to be used (see safety data sheets);
- personal protective equipment;
- the equipment to be treated;
- creating the solution;
- the release of flammable and/or toxic vapours or gases;
- the removal of the work area;
- the disposal of waste.

4.3 Rinsing vehicles

Tank containers, tankers and vacuum trucks with products foreign to Nyrstar may not be flushed on the Nyrstar sites