

## HAZARDOUS SUBSTANCE DESIGNATION

# Perchloric acid (70 wt-%)

Applies to: Department for BioMedical Research (DBMR), all laboratories

## HAZARDS FOR HUMANS AND THE ENVIRONMENT



### Hazard statements – H-phrases:

May cause fire or explosion; strong oxidizing agent (H271). May be corrosive to metals (H290). Harmful if swallowed (H302). Causes serious irritation of the skin and serious eye damage (H314). Danger of blindness due to chemical burns on the eyes! May cause damage to the thyroid through prolonged or repeated exposure (H373).



### Risk of explosion in contact with:

Alcohols, combustible substances, fluorine, organic substances, reducing agents, sulfuric acid, acetonitrile, acetylene + nitrogen dioxide, coal, antimony(III) oxide/heat, lead oxides/heat, 3-chloro-1,2-propanediol, hydrogen halogenides, chromium trioxide/heat, organic sulfoxides, dichloromethane, ethers, metals, iron(II)-sulfate, acetic acid, acetic anhydride, glycerin, glycol, glycol ether, hypophosphites, catalysts (metal oxides), oleic acid, phenol, phenylacetylene (cold), phosphine, phosphorus pentoxide pyridine, rust as an impurity, nitric acid/organic substances, sulfur trioxide, thallium acetate/ethylbenzene, impurities, heat, dehydrating substances, hydrogen, pulp (paper), cellulose.



### The substance can react dangerously with:

Aniline + formaldehyde, antimony(III)-chloride, ethyl benzene, fats, non-combustible gas (rare), ketones, methylpropene/heat, sodium iodide, sulfinyl chloride, trichloroethene, zinc phosphide.



### Decomposition products:

Hydrogen chloride, chlorine, dichlorine monoxide, chlorine dioxide.

**Danger**

### Environmental hazards:

WGK 1 - low hazard to waters.

## PROTECTIVE MEASURES AND RULES OF CONDUCT



When working in fumes or mists, keep the sash closed. Do not leave containers open. Avoid splashing and overflow when filling and decanting. When dissolving or diluting, always add the water first and then the product. Control the temperature! Pipetting with your mouth is prohibited - use pipetting aids! Keep reactive substances away or only add them in a controlled manner. Keep away from open flames and combustible materials, smoking is prohibited in the work area. Do not eat, drink or sniff. Avoid breathing vapors or mists. Avoid contact with eyes, skin and clothing. Thoroughly clean hands and after work and before every break. Immediately remove product residue from the skin. Leave laboratory coats in the laboratory. Store container tightly closed in a well-ventilated place. When decanting into containers other than the original: Affix at least the simplified labeling for laboratories with a clear chemical name, concentration, GHS hazard symbol and designation, your name and the fill date permanently and clearly.



### Observe restrictions on adolescent employees!

**Maximum stock quantity at the workplace:** 500 ml



**Eye protection:** Always wear frame safety glasses with side protection in the laboratory. If there is a risk of splashing, use goggles instead.



**Hand protection:** Nitrile rubber gloves (0.35 mm)

**Protective clothes:** Lab coat

## BEHAVIOR IN EMERGENCIES

**Fire brigade: 118**

Emergency  
Chemical  
Spill Kit



Clear and cordon off the danger area and inform your superiors. When cleaning up leaked/spilled product, always wear safety goggles and gloves. Collect and dispose of with absorbent, non-flammable material (use the provided emergency chemical spill kit)! Never use sawdust or other organic materials (risk of fire). Product does not burn under normal circumstances. In the event of a fire, adapt extinguishing measures to the surrounding area. If there is a fire in the area, take filled containers out of the danger area while observing self-protection. **Caution!** Product is flammable and increases the risk in the event of a fire. Danger of bursting if heated too much! Dangerous fumes are produced in the event of a fire. Observe escape and rescue plans. **Call the fire brigade.** Penetration into soil, water and sewage systems must be prevented.

## FIRST AID

Ambulance 144



**With every first aid measure:** Pay attention to self-protection. Carry out life-saving immediate measures such as "stable side position", "cardiopulmonary resuscitation" and "fight against shock" depending on the situation. Cover wounds in a germ-free manner. Ensure body rest and protect against heat loss. Medical or ophthalmological treatment.



**After eye contact:** Rinse within 60 seconds thoroughly with Diphotérine eye wash (1 bottle per eye) or within 10 seconds with tap water for approx. 10 minutes) with the eyelids open while protecting the uninjured eye. In case of eye injuries, use a sterile protective bandage. Always seek ophthalmological treatment after eye contact.



**After skin contact:** Take off contaminated clothing, including underwear and shoes, immediately (pay attention to the risk of fire). Rinse skin within 60 seconds with Diphotérine emergency shower or within 10 seconds with plenty of water (emergency shower).



**After inhalation:** Take the injured person out of the danger zone using self-protection (attention: the injured person should - if possible - be carried or driven, positioning with the upper body elevated). If breathing stops, artificial respiration: Use respiratory aids.

**After swallowing:** Immediately rinse your mouth vigorously with tap water.

## PROPER DISPOSAL



**Do not pour down the drain or trash can!** Collect waste separately. Product residues are hazardous waste and are collected separately. Never mix it with other waste!

Perchloric acid is first diluted in a beaker with high walls below 50 wt-% by stirring cautiously in ice water. It is then neutralized with NaOH (10 %), Na<sub>2</sub>CO<sub>3</sub> (5-10 %) solution. When bubble formation stops (CO<sub>2</sub>) check pH value (pH 6-8). Collect in the provided white canisters solutions for salt solutions (max. filling level of the canister is 80%). Close the canister tightly. Clean outer surface as needed.

Collect soaked material (e.g. cleaning rags) in the provided white bins for hazardous chemical waste.

Collection vessels must be clearly labelled with a systematic description of their contents, contact person, the organizational unit and the date.

Store the full vessels in the local chemical waste storage room (Mu35 D820, Mu28\_xx) resp. hand them over to the Inselspital Bern Distribution (Fr15, Mu40-42, SH1, SH2, AKL, PKT1, DERMK) for disposal.

