

## Safety data sheet

according to ChemO 2015 - SR 813.11

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### SECTION 1: Identification of the substance/preparation and of the company/undertaking

#### 1.1 Product identifier

Trade name: Hydroliq Water Disinfection Plus

*Other designation*

UFI code: GVH5-M0H8-2000-C6FA

#### 1.2 Relevant identified uses of the substance or preparation and uses advised against

Disinfectant (biocidal product). See also section 7.3 - Specific end uses.

#### 1.3. details of the manufacturer providing the safety data sheet.

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E-mail (competent person): [michael.ziefle@hydroliq.com](mailto:michael.ziefle@hydroliq.com)

#### 1.4. emergency number

Swiss national emergency number: 145 (available 24h, Tox Info Suisse, Zurich; for calls from Switzerland, information in German, French and Italian).

+41 442 515 151 (Tox Info Suisse)

+49 (0)30 192 40 (Berlin Poison Control)

### SECTION 2: Potential hazards

#### 2.1 Classification of the substance or preparation

No classification required.

#### 2.2 Marking elements

No labelling required.

#### 2.3 Other hazards

Not PBT/vPvB according to Article 4 ChemO.

Direct contact with the liquid product may cause eye irritation and mild irritation of sensitive skin or open wounds. Ingestion of the solution may cause irritation of the throat and digestive tract. The nebulised product (aerosol) may irritate the eye with conjunctiva and the upper respiratory tract including nose and throat with prolonged exposure.

### SECTION 3: Composition/Information on ingredients

#### 3.1. substances

Not applicable

#### 3.2 Preparations

Solution in water with biocidal active ingredients.

Name	Identificator	Weight %	Classification acc. 1272/2008/EC (100 %)
Active chlorine, released from hypochlorous acid	CAS No. 7790-92-3, EC No. 232-232-5	0.075 (= 750 mg/kg or 750 ppm)	None (active chlorine < 0.25 %)
with shares of			
Chlorine	CAS No. 7782-50-5, EC No. 231-959-5		Dgr, GHS03, GHS06, GHS09 Ox. Gas 1, H270 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Acute Tox. 3, H331 STOT SE 3, H335 Aquatic Acute 1, H400
Hypochlorous acid	CAS No. 7790-92-3, EC No. 232-232-5		None
Sodium hypochlorite	CAS No. 7681-52-9, EC No. 231-668-3		Dgr, GHS05, GHS09 EUH031 (Conc. ≥ 5 % active chlorine) Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Sodium chloride	CAS No. 7647-14-5, EC No. 231-598-3	0,05 - 1,0	Wng, GHS07 Eye Irrit. 2, H319

The wording of the listed hazard statements can be found in section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

After eye contact: In case of eye irritation, rinse with running tap water or eye wash/eye shower for several minutes.

After skin contact: If skin irritation occurs, remove product with soap and warm water. Remove clothing soaked with the product.

After ingestion: Consult a doctor. After swallowing a small amount of the product, dilution by drinking tap water may be considered. Do not induce vomiting.

After inhalation: Supply fresh air. If symptoms persist, such as dizziness or nausea, consult a doctor.

#### **4.2 Most important symptoms and effects, both acute and delayed**

Eye and skin irritation possible after eye/skin contact (acute and delayed). Local irritation, drowsiness and nausea after inhalation or ingestion (acute and delayed).

#### **4.3. indications for immediate medical help or special treatment**

Treatment of symptoms. No antidote known. No special treatment required.

### **SECTION 5: Fire-fighting measures**

#### **5.1 Extinguishing media**

Carbon dioxide (CO<sub>2</sub>), alcohol-resistant foam, dry extinguishing agent, water spray. Adapt extinguishing measures to the surroundings.

#### **5.2 Special hazards arising from the substance or preparation**

Non-flammable substance. In case of fire, small quantities of hazardous gases may be released: chlorine, hydrogen chloride gas, chlorine oxides.

#### **5.3 Advice for fire fighting**

According to general recommendations in case of fire in the presence of vapours, aerosols, combustion products: use self-contained breathing apparatus.

### **SECTION 6: Accidental release measures**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation. Do not inhale aerosols / vapours. Advice for emergency personnel: see section 8.

#### **6.2 Environmental protection measures**

Do not allow concentrate to enter drains, surface water or soil.

#### **6.3 Methods and material for containment and cleaning up**

Absorb small quantities of spilled product with disposable cloths. Contain and absorb larger quantities with absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and place in containers for disposal in accordance with local / national legislation (see chapter 13). Clean up (see section 7.1).

#### **6.4 Reference to other sections**

For information on safe handling, see section 7. For information on protective equipment, see section 8. For information on disposal, see section 13.

### **SECTION 7: Handling and storage**

#### **7.1 Protective measures for safe handling**

##### **Measures to protect against fire and explosions:**

Usual measures of preventive fire protection. No flammable material.

**Information for safe handling:** Observe the usual precautionary measures when handling chemicals. Avoid contact with eyes and skin. Provide eyewash bottle or eye wash at workplace if running tap water is not available. Wear gloves if skin is sensitive. Remove contaminated clothing and wash before reuse. Do not inhale aerosols and vapours. Do not eat, drink or smoke in the work area. Wash hands before breaks and at the end of work.

**Measures to protect the environment:** Avoid release into the environment. Do not allow to enter drains.

## 7.2 Conditions for safe storage taking into account incompatibilities

### Information on storage conditions

Keep container tightly closed in a cool, dry, well-ventilated place. Protect from heat. Protect from exposure to light. Development of oxygen and chlorine possible.

### Requirements for storage rooms and containers

If possible, store in the sealed original container. Unbreakable plastic containers are preferable to glass containers. Label contents correctly. Place fragile containers in shatter-proof receptacles. Do not store in food containers because of the risk of confusion.

Storage class: not applicable (no hazardous substance)

## 7.3 Specific end uses

Disinfectants (biocide product type 5)

Dosage recommendations:

Drinking water e.g. in medical/dental practices: 0.025 to 0.075 %.

Water in swimming pools and spas: 0.05 to 0.3%.

Drinking water in animal husbandry: up to approx. 0.75%.

The appropriate dosage is determined taking into account the construction and condition of the water installations, as well as the ordinance of the FDHA on drinking water and water in publicly accessible bathrooms and shower facilities. For professional and private use.

## SECTION 8: Exposure controls/personal protective equipment

### 8.1 Parameters to be monitored

MAK value of chlorine, CAS no. 7782-50-5: 0.5 ppm or 1.5 mg/m<sup>3</sup> (SUVA)

Short-term limit value of chlorine: 0.5 ppm or 1.5 mg/m<sup>3</sup> (SUVA)

MAK value of trichloramine: 0.06 ppm or 0.3 mg/m<sup>3</sup> (SUVA)

The product does not contain any other substances with occupational exposure limits.

#### **DNEL (worker) for chlorine, CAS No. 7782-50-5:**

DNEL acute inhalation (local and systemic): 1.5 mg/m<sup>3</sup>

DNEL Long-term inhalation (local and systemic): 0.75 mg/m<sup>3</sup>

DNEL long-term dermal (systemic): 0.5 %.

#### **DNEL (consumer) for chlorine, CAS No. 7782-50-5:**

DNEL acute inhalation (local and systemic): 1.5 mg/m<sup>3</sup>

DNEL Long-term inhalation (local and systemic): 0.75 mg/m<sup>3</sup>

DNEL long-term dermal (systemic): 0.5 %.

DNEL Long-term oral (repeated): 0.25 mg/kg bw/day

**PNEC for chlorine, CAS No. 7782-50-5:**

PNEC waters, freshwater: 0.21 µg/L

PNEC waters, periodic release: 0.26 µg/L

PNEC sewage treatment plant (STP): 0.03 mg/L

PNEC secondary poisoning: 11.1 mg/kg food

PNEC waters, seawater: 0.042 mg/L

**8.2 Exposure controls and monitoring**

**8.2.1 Suitable technical protective measures**

Ensure good ventilation of the work area. Provide washing facilities at the workplace, or provide eye wash/eyewash bottles and mark them conspicuously.

**8.2.2 Individual protective measures - personal protective equipment**

General protective and hygienic measures - see section 7.1

**Eye / face protection**

Safety goggles with side protection if required.

**Skin protection**

Work with gloves if skin is sensitive. Preventive skin protection recommended.

**Gloves**

Protective gloves according to DIN EN 374. Suitable glove material also for prolonged, direct contact: Polyvinyl chloride (PVC), nitrile rubber, chloroprene rubber (CR), butyl rubber, fluoroelastomer (FKM). Breakthrough time (maximum wearing time): >480 min. Gloves must be checked for leakage before use. The penetration time may vary depending on the design and conditions of use. Ask the manufacturer of the protective gloves for information on permeability and breakthrough times.

**Breathing protection**

No respiratory protection is required when used as directed.

**8.2.3 Limitation and monitoring of environmental exposure**

Avoid release into the environment. Do not allow to enter drains.

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Appearance: Clear, colourless liquid

Odour: faint smell of chlorine

Odour threshold: from a concentration of 0.06 - 0.2 ppm active chlorine

pH value: 6.0

Melting point/freezing point: approx. 0 °C

Initial boiling point and boiling range: approx. 100 °C

Flash point: not applicable

Evaporation rate: not determined

Flammability (solid, gaseous): non-flammable

Upper/lower flammability or explosion limits: none

Vapour pressure: 23 hPa at 20 °C

Vapour density: not determined

Relative density: approx. 1.02 g/cm<sup>3</sup>

Solubility(ies): completely soluble in water

Partition coefficient: n-octanol/water: not determined

Auto-ignition temperature: none

Decomposition temperature: none

Viscosity: not determined

Explosive properties: none

Oxidising properties: weakly oxidising

## **9.2 Other information**

No further relevant information available.

## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

See section "Possibility of hazardous reactions".

### **10.2 Chemical stability**

Stable under recommended conditions of use and storage (See section 7).

### **10.3 Possibility of hazardous reactions**

No dangerous reactions of the product are known. The ingredient chlorine can react violently with flammable substances and reducing agents, oxidises organic substances violently, causes rapid corrosion of some metals with water. At elevated temperatures (> 120 °C) chlorine reacts spontaneously with iron (chlorine-iron fire). Chlorine can react with aluminium, alcohols and numerous chemical compounds. The ingredient sodium hypochlorite can undergo exothermic reactions with acids and oxidising agents.

### **10.4 Conditions to avoid**

Heating, warming, sunlight.

### **10.5 Incompatible materials**

No further relevant information available.

### **10.6 Hazardous decomposition products**

None known. Possible decomposition products of the ingredients chlorine and sodium hypochlorite are hydrogen chloride and chlorine oxides.

## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

Acute toxicity: no data available

Skin corrosion/irritation: Product may be slightly irritating. Practical experience.

Serious eye damage/irritation: Product may be irritating. Practical experience.

Respiratory/skin sensitisation: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: No data available.

Reproductive toxicity: no data available

Specific target organ toxicity (single exposure): No data available.

Specific target organ toxicity (repeated exposure): No data available.

Aspiration hazard: Irritation of the respiratory tract possible in case of aspiration.

#### **Toxicological data for the ingredient chlorine, CAS No. 7782-50-5:**

LD<sub>50</sub> Acute Oral (rat): 1100 mg/kg body weight (data from sodium hypochlorite, read-across).

LD<sub>50</sub> Acute dermal (rabbit): > 20 g/kg body weight (data from sodium hypochlorite, read-across).

LC<sub>50</sub> Acute Inhalation (0.5 h, rat, OECD 403): 1,462 mg/L

Irritant effect skin: irritant. Experiences from practice.

Irritant effect eye: irritant - danger of serious eye damage. Experience from practice.

Skin sensitisation (guinea pig, OECD 406): not sensitising.

Respiratory sensitisation: Test not necessary for scientific reasons.

Chronic toxicity (90 d, rat, OECD 413): NOAEL Inhalation 0.5 ppm. No systemic

Effects to be observed, irritation of the respiratory system.

Mutagenicity: (OECD 471): Data inconclusive.

Reproductive toxicity (oral, rat, OECD 415): No evidence of reproductive toxic effects.

Carcinogenicity (inhalation, rat): There are no indications of a carcinogenic effect from long-term tests.

## **SECTION 12: Environmental information**

### **12.1 Toxicity**

Ecotoxicological data for the product are not available.

#### **Ecotoxicological data of the ingredient chlorine, CAS No. 7782-50-5:**

Fish LC<sub>50</sub> (96 h, rainbow trout): 0.06 mg/L (data from sodium hypochlorite, read-across).

Daphnia EC<sub>50</sub> (48 h, Daphnia magna): 0.041 mg/L (data from sodium hypochlorite, read-across).

Algae EC<sub>50</sub> (48 h, Chlorella sp.): 0.023 mg/L (data from sodium hypochlorite, read-across).

Bacteria EC<sub>50</sub> (3 h, activated sludge): 3 mg/L

### **12.2 Persistence and degradability**

The physicochemical degradability of the ingredient chlorine has not been determined. The ingredient sodium hypochlorite can be degraded by chemical or photolytic processes. Decomposition by hydrolysis. Aquatic half-life < 1 day.

#### **Biodegradability**

The methods for determining biodegradability are not applicable to inorganic substances.

#### **12.3 Bioaccumulative potential**

No bioaccumulation potential. Log Kow of chlorine = 0.85, Log Kow of hypochlorous acid = -0.87, Log Kow of sodium hypochlorite = -3.42 (KOWWIN v1.67 estimates).

#### **12.4 Mobility in soil**

High mobility. Adsorption in soil is not expected.

#### **12.5 Results of the PBT and vPvB assessment**

The PBT or vPvB criteria of Annex XIII of REACH do not apply to inorganic substances.

#### **12.6 Other adverse effects**

Do not allow uncontrolled release of product into the environment. The product must not get into groundwater or surface waters. The active ingredient active chlorine contained in the product can reduce the performance of active sludge in sewage treatment plants at concentrations of 5 mg/L and above.

### **SECTION 13: Disposal instructions**

#### **13.1 Waste treatment processes**

Waste code according to Annex 1 of the List of Wastes pursuant to Article 2 VeVA, SR 814.600: 06 13 01 (Inorganic plant protection products, wood preservatives and other biocides)

Dispose of completely emptied and cleaned containers with municipal waste. Recommended cleaning agent: Water, if necessary with the addition of cleaning agents. Return partially emptied containers to the point of sale or hand them over to the collection point for special waste. Dispose of in accordance with official regulations.

### **SECTION 14: Transport information**

Regulations according to ADR, RID, ADN, IMDG, ICAO: not applicable

#### **14.1 UN number**

Not applicable

#### **14.2 UN proper shipping name**

Not applicable

#### **14.3 Transport hazard classes**

Not applicable

#### **14.4 Packing group**

Not applicable

#### **14.5 Environmental hazards**

Not applicable



#### 14.6 Special precautions for the user

Not applicable

#### 14.7 Carriage in bulk in accordance with Annex II of the MARPOL Convention and the IBC Code.

Not applicable

### SECTION 15: Legislation

#### 15.1. safety, health and environmental regulations/legislation specific to the substance or preparation.

Authorisation number for Switzerland as biocidal product according to Biocidal Products Ordinance, SR 813.12, and ChemO, SR 813.11: CHZN5775.01.003

Hydroliq Solutions GmbH is registered as a manufacturer of the active substance "Active chlorine released from hypochlorous acid" (EC No 232-232-5, CAS No 7790-92-3) for product types 2 and 4 in the list referred to in Article 95 of Regulation (EU) No 528/2012.

Water hazard class according to GSchV, SR 814.201: Class B

#### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been prepared.

### SECTION 16: Other information

#### Full text of hazard statements in sections 2 and 3:

H270: May cause or intensify fire; oxidiser.  
H314: Causes severe skin burns and eye damage.  
H315: Causes skin irritation.  
H318: Causes serious eye damage.  
H319: Causes severe eye irritation.  
H331: Toxic by inhalation.  
H335: May cause respiratory irritation.  
H400: Very toxic to aquatic organisms.  
H410: Very toxic to aquatic life, long lasting.  
EUH031: Contact with acids liberates toxic gas.

#### Abbreviations:

DNEL: Derived no effect concentration  
Dng: Danger  
EC<sub>50</sub> : Effective concentration, 50 percent  
LC<sub>50</sub> : Lethal concentration, 50 percent  
LD<sub>50</sub> : Lethal dose, 50 percent  
MAK: Maximum workplace concentration  
PBT: persistent, bioaccumulative and toxic  
PNEC: Estimated no effect concentration  
STOT SE: Specific target organ toxicity after a single exposure.  
SUVA: Swiss Accident Insurance Fund  
vPvB: very persistent and very bioaccumulative  
Wng: Warning



**Sources of the most important data**

For the preparation of this safety data sheet, information as well as data from the "Database of registered substances" of the European Chemicals Agency and the GESTIS substance database were used.