



**German metal Surface treatment Chemicals Co.**  
**Research and Development Department**  
**Water treatment Division**

# MATERIAL SAFETY DATA SHEET

## CMC 4495

### MANUFACTURER:

**German metal surface treatment (SUGEST)**

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### 1. Product and Company Identification

**NAME** CMC 4495  
**USE** used as a potent biocide in industry  
**LABEL** CMC 4495  
**Company** German metal surface treatment chemicals co.

### 2. Product Description

**CMC 4495** is a potent biocide in industry circulation cooling water system, wastewater treatment and swimming pool water based on synergistic mix isothiazoline/benzalkonium Chloride in liquid form kill by inhibiting microbial respiration and food transport through the cell wall.

### 3. Hazards Identification

#### Emergency Overview

#### CAUTION!

**MAY BE HARMFUL IF SWALLOWED. MAY CAUSE EYE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.**

May be harmful if swallowed. Slightly irritating to the eyes. Do not ingest. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Contains material that can cause target organ damage. Wash thoroughly after handling.

KEEP OUT OF REACH OF CHILDREN.

#### Potential Health Effects

**HMIS:** Health 3 Flammability 0 Reactivity 0 Personal Protection: B  
4 = extreme 3 = high 2 = moderate 1 = slight

- **Inhalation:** No known significant effects or critical hazards.
- **Skin contact:** irritation occurs and corrosive promoter. Do not use undiluted on skin.
- **Eye contact:** irritating to the eyes. Damage particularly on mucous membranes of eyes. Avoid contact with eyes.





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- **Ingestion:** Harmful if swallowed, may cause irritation to mouth, throat and stomach.
- **Chronic effects:** Contains material that can cause target organ damage.
- **Mutagenic effects:** Mutagenic for mammalian somatic cells. [Benzalkonium chloride]. Mutagenic for bacteria and/or yeast.

#### 4. Chemical Composition

Ingredient	CAS No	Percent
Benzalkonium chloride	8001 – 54 - 5	10 - 30
Isothiazoline	26172 – 55 - 4	10 - 30
Water	7732 – 18 - 5	To 100

#### 5. Physical and Chemical Properties

Appearance	Clear Yellowish Colour liquid
Odour	Characteristic
pH at 25 °C	1.5 – 2.5
Density at 25 °C	1.01 ±0.05 gm/cm <sup>3</sup>

#### 6. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Skin contact:**

Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. irritation persists seek immediate medical attention.

**Eye contact:**

In case of contact with the eyes, rinse immediately with plenty of water for 15 minutes, and if irritation persists, seek immediate medical attention.

**Ingestion:**

Seek medical advice. DO NOT induce vomiting unless directed to do so by medical personnel. Give one to two glasses of water or milk. Never give anything by mouth to a victim who is unconscious or is having convulsions.

**General advice**

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Keep out of reach of children.

#### 7. Fire Fighting Measures



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**Flammable properties** not Flammable

**Suitable extinguishing media** Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Cool containers exposed to heat with water spray and remove container, if no risk is involved..space

**Hazardous thermal decomposition products** : May be sulfur oxides, metal oxide/oxides, oxides of nitrogen. If heated to more than 150°C, the following substance(s) will be released: Benzyl chloride and Methyl chloride.

## 8. Accidental Release Measures

Use personal protection recommended in Section 10 , isolate the hazard area and deny entry to unnecessary and unprotected personnel.

**Environmental precautions:**

Do not flush into surface water or sanitary sewer system.

**Small Spill:**

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill:**

Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

**Clean-up methods:**

Eliminate all ignition sources. Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labeled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

## 9. Handling and Storage

**Handling:**

Avoid contact with eyes, skin and clothing. Avoid breathing mists or aerosols of this product. Provide adequate ventilation. Wash hands before eating, drinking, smoking, or using toilet facilities. Wash thoroughly after work using soap and water.

KEEP OUT OF REACH OF CHILDREN AND PETS. Use only as directed.

Keep away from heat and sources of ignition.

**Storage:**

**Storage Conditions:** Store in a cool, dry and good ventilated place. Keep container tightly closed after opening. Prevent direct sun light or ignition sources.

**Temperature Limit:** max 35 °C.

**Maximum Storage Period:** 24 Months under standard storage conditions.

Keep away from heat, open flames or other sources of ignition.

**Container Type** Packaging must comply with requirements of Hazardous Substances (Packaging) Regulations 2001.

For information on product shelf life, please review labels on container.

## 10. Exposure Controls/Personal Protection

Hazardous components	
Isothiazoline	TWA = 0.076 mg/m <sup>3</sup> STEL = 0.23 mg/m <sup>3</sup>



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**Engineering controls:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

**Respiratory protection:**

Use with adequate ventilation. A respirator is not needed under normal and intended conditions of product use.

**Eye/face protection:**

Safety glasses.

**Skin protection:**

For prolonged or repeated handling, use gloves. Recommended: Neoprene gloves. Nitrile gloves. Rubber gloves.

**General hygiene considerations** Washing with soap and water after use is recommended as good hygienic practice to prevent possible eye irritation from hand contact.

## 11. Stability and Reactivity

**Chemical stability** Stable at normal conditions.

**Conditions to avoid** Not available.

**Incompatible materials** Oxidizing agents, anionic detergents, nitrates, permanganates, silicylates, silver salts, and tartrates.

**Hazardous decomposition products** Hydrogen chloride. Nitrogen oxides (NO<sub>x</sub>). If heated to more than 150°C, the following substance(s) will be released: Benzyl chloride and Methyl chloride.

**Possibility of hazardous reactions** Hazardous polymerization does not occur.

## 12. Toxicological information

### I- Benzalkonium chloride

**Routes of Entry**

Absorbed through skin. Eye contact.

**Toxicity to Animals**

Acute Dermal LD50 Rat: 1420 mg/kg

Acute Inhalation LC50 Rat: 53 mg/m<sup>3</sup> 4 hours

Acute Oral LD50 Mouse: 150 mg/kg

Acute Oral LD50 Rat: 240 mg/kg

**Carcinogenicity**

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

### II- Isothiazoline

**General Product Information**

Inhalation LC50 Rat: > 13.7 mg/l

Oral LD50 Rat: 3.81 g/kg

Dermal LD50 Rabbit: >5 g/kg

**Chronic Toxicity Data** – A 90 day dietary study in dogs of 840 ppm of isothiazolinone resulted in no mortalities or pathological findings. A 90-day dermal study in rabbits of 0.4 mg/kg/day of isothiazolinone resulted in irritation but no pathological effects. A 30-month skin painting study with mice using 400 ppm isothiazolinone three times per week showed no increased tumor frequency over control. A teratology study with rabbits and rats was negative using dosages of 1.5 to 15 mg/kg isothiazolinone. Mutagenicity results have been equivocal.

**Other Toxicological Information**

May cause sensitization by skin contact. A guinea pig (Buehler technique) sensitization study with an induction dosage of 90 ppm of isothiazolinone followed by an insult of 429 ppm of isothiazolinone was positive.

**Ecotoxicity :**

### I- Benzalkonium chloride

LC50 Bluegill (*Lepomis macrochirus*): 0.223 - 0.46 mg/l 96 hours



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**Mobility:** The product is water soluble and may spread in water systems. The product contains organic solvents which will evaporate easily from all surfaces.

**Degradability:** Benzalkonium chloride 80% < 20ppm: The product is expected to be biodegradable.

**Ecotoxicity:** Very toxic to aquatic organisms.

**Bioaccumulative potential:** Bioaccumulation: Is not expected to be bioaccumulable.  
Other adverse effects: The product contains a substance which has a photochemical ozone creation potential.

**II- Isothiazoline**

**Aquatic Toxicity**

**Component #1 (CAS No.)**

**Test & Species Conditions**

6 D LC50 rainbow trout 12.3 mg/l

96 Hr LC50 bluegill sunfish 18.7 mg/l

96 Hr LC50 goldfish

30 min EC50 Photobacterium

phosphoreum

48 Hr LC50 Daphnia magna ~ 10.6 mg/l

**Component #2 (CAS No.)**

**Test & Species Conditions**

48 Hr LC50 bluegill

**Environmental Fate**

This product and possible degradation products are not considered to be environmentally persistent or toxic.

### 13. Disposal Considerations

**Disposal method:**

**Industrial setting:** Disposal is according to all federal , state and local authorities for restrictions on disposal of chemical waste ,manage chemical, waste through an approved waste treatment facility , do not reuse empty container in accordance with current local community codes please recycle empty container whenever possible.

**Waste from residues:** EWC-code:

07 05 07

07 06 07

### 14. Transport information

**DOT Classification:** Class 8: Corrosive material

Land, Sea **IMDG (Marine Transport)** , **IATA/ICAO (Air)** Transport

UN Number: 2924

Shipping Name: CMC 4495

Packing Group: III



Corrosion/Irritation



### 15. Other Information



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**Other Regulations:** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).  
**WHMIS (Canada):**

CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC). CLASS E: Corrosive liquid.

**DSCL (EEC):**

**REGULATORY INFORMATION**

Contains:

Corrosive Dangerous for the environmen

R21/22 Harmful in contact with skin and if swallowed.

R34 Causes burns.

R50 Very toxic to aquatic organisms.

S24/25 Avoid contact with skin and eyes.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

S60 This material and its container must be disposed of as hazardous waste.

S61 Avoid release to the environment. Refer to special instructions/safety data sheets.

As a general rule, persons under 18 years of age are not allowed to work with this product.

Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (S.I 2002 No. 1689) with amendments.

The Control of Substances Hazardous to Health Regulations 2002 (S.I 2002 No. 2677) with amendments.  
 EH40/2005, Workplace exposure limits 2005

The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242).

The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895).

## 16. Packing

**HDPE container and sealed cap**

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