

## Product information ci 15 (*corrosion inhibitor*)

### Application

**ci 15** is a corrosion inhibitor for closed and semi-open cooling systems. **ci 15** can be used in closed loops containing metals such as steel, cast iron and non-ferrous metals. When installing aluminium-containing cables, their resistance (e.g., pH value) under certain operating conditions must be taken into consideration. Please consult with your gwk engineer. **ci 15** should be used in combination with softened water (0° dH) or deionized water (<25 µS/cm). The application range is between 5 - 150°C.

The use of conditioning substances that contain molybdates can result in discolouration of the system water. The cause for this is the formation of coloured complexes whenever water contains various substances. Furthermore, highly effective polycarbonate acids are used in the products. They prevent the formation of deposits and are also capable of acting on old scale and products of corrosion. This can also affect the colour of the system water. Neither one of these mechanisms generally has an effect on the performance of the corrosion and scale inhibitors.

### Properties

**ci 15** is a liquid, molybdates-containing product. It also contains inhibitors to prevent corrosion of copper and non-ferrous metals.

Appearance:	clear, yellowish liquid
Density:	1.1 kg/dm <sup>3</sup>
pH value:	10-11
MoO <sub>4</sub> content:	5 %

The information given here is not a product specification; it is for information purposes only.

### Dosing

The dosage depends on the type of the system and the operating conditions. Dosing containers, pipelines, and dosing pumps should be made of alkali-resistant material such as PE, PP, stainless steel or PVC. The usual application concentrations for **ci 15** are between 3400 – 4000 g/m<sup>3</sup>.

**ci 15** can be used in soft water, deionized water (demineralised water) and glycol-containing solutions.

The product is proven via the molybdenum content Mo. The Mo<sup>6+</sup> content should be at least 100 mg/L. Test kit gwk Article No. 8110575.

### Handling

Suitable personal protective measures are provided in the safety data sheet.

### Important information

A Material Safety Data Sheet is included with each of our products. The material safety data sheets contain important information on occupational health and safety, on the basis of which our customers can generate appropriate work instructions to protect their employees and customers in order to prevent harmful effects when handling the substances. Before using the gwk products in your system, make sure that the material safety data sheets have been read and understood by your supervisory staff and the appropriate employees.

### Shelf life

3 months in opened container.

At least 1 year in unopened container.

Storage conditions: dry, cool, frost-free, dark

### How the product is supplied

10 kg canister, 25 kg canister, 200 kg barrel

All descriptions, information, and data contained herein is believed to be accurate and reliable. However, it does not constitute a warranty, express or implied warranty of any properties, nor does it represent a commitment to commercial or technical suitability for any particular application. Therefore, we cannot accept any liability whatsoever. These descriptions, information, and data should serve as a basis for your considerations, research, and examinations. Statements and suggestions on our part regarding the possible use of our product are without guarantee that such an application does not infringe on industrial property rights of third parties, and they should not be regarded as a suggestion for patent infringement.

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

ci 15

**Product code:**

gwkci15

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Water treatment chemicals

**Uses advised against**

No information available.

**1.3. Details of the supplier of the safety data sheet**

Company name:	gwk	
	Gesellschaft Wärme und Kältetechnik mbH	
Street:	Scherl 10	
Place:	D-58540 Meinerzhagen	
Telephone:	+49 2354 7060 - 0	Telefax: +49 2354 7060 - 156
e-mail (Contact person):	info@gwk.com	
Internet:	www.gwk.com	
Responsible Department:	Wassertechnik	

**1.4. Emergency telephone number:****+49 (0) 30 30686700****SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Skin corrosion / irritation: Skin irritation. 2

Serious eye damage / eye irritation: Eye irritation. 2

Hazard statements:

Causes skin irritation.

Causes serious eye irritation.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**

None.

**Signal word:** Attention**Pictograms:**

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**Hazard statements**

H315 Causes skin irritation.  
 H319 Causes serious eye irritation.

**Precautionary statements**

P280 Wear protective gloves / protective clothing / eye protection / face protection.  
 P302 + P352 IF ON SKIN: Wash with plenty of water.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if possible. Continue rinsing.  
 P337 + P313 If eye irritation persists: Get medical advice / attention.

**Additional advice on labelling**

The product is classified and labelled according to EC directives or corresponding national laws.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures****Chemical characterization**

Formulation of preparations (mixtures)

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
95-14-7	benzotriazole			< 5 %
	202-394-1	.		
	Acute Tox. 4, Eye Irrit. 2, Aquatic Chronic 3; H302 H319 H412			
1310-73-2	sodium hydroxide			< 2 %
	215-185-5		01-2119436643-00	
	Skin Corr. 1A; H314			
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Full text of H and EUH statements: see section 16.

**Further Information**

No information available.

**SECTION 4: First aid measures****4.1. Description of first aid measures**

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**General information**

Remove contaminated, saturated clothing immediately.

**After inhalation**

Move victim to fresh air. Instruct person to keep calm and warm.

**After contact with skin**

After contact with skin, wash immediately with plenty of water and soap.

**After contact with eyes**

If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist.

**After ingestion**

Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person or a person with cramps.

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

No information available.

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Water. Foam. ABC powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media**

High power water jet.

**5.2. Special hazards arising from the substance or mixture**

In the event of a fire: Nitrogen oxides (NO<sub>x</sub>). Hydrogen chloride (HCl). Carbon monoxide

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Wear personal protection equipment.

**6.2. Environmental precautions**

Prevent spread over a wide area (e.g. by containment or oil barriers).

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

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

**6.4. Reference to other sections**

Take up mechanically, placing in appropriate containers for disposal.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

No special measures are necessary.

**Advice on protection against fire and explosion**

No special fire protection measures are necessary.

**Further information on handling**

No special handling instructions are necessary.

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### 7.2. Conditions for safe storage, including any incompatibilities

**Requirements for storage rooms and vessels**

Keep/Store only in original container.

**Advice on storage compatibility**

Keep away from food, drink and animal feedingstuffs.

**Further information on storage conditions**

Conditions to avoid: frost.

### 7.3. Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

**Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
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**Additional advice on limit values**

No information available.

### 8.2. Exposure controls

**Appropriate engineering controls**

No information available.

**Protective and hygiene measures**

Do not eat, drink, smoke or sneeze at the workplace.

**Eye/face protection**

Tightly sealed safety glasses.

**Hand protection**

Passenger-LQ

**Skin protection**

No information available.

**Respiratory protection**

No information available.

**Environmental exposure controls**

No information available.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state: liquid  
 Colour: light yellow  
 Odour: characteristic

pH-Value (at 20 °C):

**Test method**  
 10 - 11 DIN 19268

**Changes in the physical state**

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Melting point: - 1 °C DIN 51556  
 Initial boiling point and boiling range: ca. 100 °C ASTM D 1120  
 Density (at 25 °C): ca. 1,1 g/cm<sup>3</sup> DIN 12809

**9.2. Other information**

No information available.

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No information available.

**10.2. Chemical stability**

No information available.

**10.3. Possibility of hazardous reactions**

Oxidizing agents. Alkali metals. Acid. Reducing agent. Alkalis (alkalis).

**10.4. Conditions to avoid**

No information available.

**10.5. Incompatible materials**

Oxidizing agents. Alkali metals. Acid. Reducing agent. Alkalis (alkalis).

**10.6. Hazardous decomposition products**

No information available.

**Further information**

No information available.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

**Toxicocinetics, metabolism and distribution**

No information available.

**Acute toxicity**

Based on available data, the classification criteria are not met.

CAS No	Chemical name			
	Exposure route	Dose	Species	Source
65-14-7	benzotriazole			
	oral	ATE 500 mg/kg	.	.
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**Irritation and corrosivity**

Causes skin irritation.  
 Causes serious eye irritation.

**Sensitising effects**

Based on available data, the classification criteria are not met.

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### Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

### STOT-single exposure

Based on available data, the classification criteria are not met.

### STOT-repeated exposure

Based on available data, the classification criteria are not met.

### Aspiration hazard

Based on available data, the classification criteria are not met.

### Specific effects in experiment on an animal

No information available.

### Additional information on tests

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

### Practical experience

### Observations relevant to classification

No information available.

### Other observations

No information available.

### Further information

No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

The product has not been tested.

CAS No	Chemical name				
	Aquatic toxicity	Dose	[h]   [d]	Species	Source
1310-73-2	sodium hydroxide				
	Acute fish toxicity	LC50	45,4 mg/l	96 h	Onchorhynchus mykiss
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### 12.2. Persistence and degradability

Technically correct releases of minimal concentrations to adapted biological sewage treatment facility, will not disturb the biodegradability of activated sludge.

### 12.3. Bioaccumulative potential

Does not accumulate in organisms.

### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
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**12.4. Mobility in soil**

No information available.

**12.5. Results of PBT and vPvB assessment**

No information available.

**12.6. Other adverse effects**

No information available.

**Further information**

No information available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Advice on disposal**

Waste key product: Dispose of waste according to "Kreislaufwirtschafts- und Abfallgesetz (KrW-/AbfG)".

**Contaminated packaging**

Contaminated packages must be completely emptied and can be re-used following proper cleaning. Packing which cannot be properly cleaned must be disposed of.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number:**

No dangerous good in the sense of these transport regulations.

**14.2. UN proper shipping name:**

No dangerous good in the sense of these transport regulations.

**14.3. Transport hazard class(es):**

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**14.4. Packing group:**

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Hazard label:

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Classification code:

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Special Provisions:

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Limited quantity:

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Excepted quantity:

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Transport category:

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Hazard No:

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Tunnel restriction code:

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**Inland waterways transport (ADN)****14.1. UN number:**

No dangerous good in the sense of these transport regulations.

**14.2. UN proper shipping name:**

No dangerous good in the sense of these transport regulations.

**14.3. Transport hazard class(es):**

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**14.4. Packing group:**

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Hazard label:

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Classification code:

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Special Provisions:

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Limited quantity:

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Excepted quantity:

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**Marine transport (IMDG)****14.1. UN number:**

No dangerous good in the sense of these transport regulations.

**14.2. UN proper shipping name:**

No dangerous good in the sense of these transport regulations.

**14.3. Transport hazard class(es):**

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**14.4. Packing group:**

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Hazard label:

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Special Provisions:

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Limited quantity: .  
 Excepted quantity: .  
 EmS: .

### Air transport (ICAO-TI/IATA-DGR)

**14.1. UN number:** No dangerous good in the sense of these transport regulations.  
**14.2. UN proper shipping name:** No dangerous good in the sense of these transport regulations.  
**14.3. Transport hazard class(es):** .  
**14.4. Packing group:** .  
 Hazard label: .  
 Special Provisions: .  
 Limited quantity Passenger: .  
 Passenger LQ: .  
 Excepted quantity: .  
 IATA-packing instructions - Passenger: .  
 IATA-max. quantity - Passenger: .  
 IATA-packing instructions - Cargo: .  
 IATA-max. quantity - Cargo: .  
 Danger releasing substance: .

### 14.6. Special precautions for user

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### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

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### Other applicable information

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## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulatory information

#### Additional information

No information available.

#### National regulatory information

Water contaminating class (D): 1 – slightly water contaminating

Biocide registry number: .

## SECTION 16: Other information

### Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed.  
 H314 Causes severe skin burns and eye damage.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H412 Harmful to aquatic life with long lasting effects.

### Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

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The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*