

## hs 20 (hardness stabiliser) product information

### Application

**hs 20** is a mixture of polycarboxylic acid and phosphonates. It is used as a corrosion inhibitor and hardness stabiliser. The product is compatible with most water treatment chemicals and remains unaffected by free chlorine under normal conditions. **hs 20** is mostly used in cooling water systems. However, it is also suitable for other systems where hardness salt deposits must be prevented and which require a product with low toxicity and high effectiveness.

Cooling water parameters:

Calcium hardness = 8 – 35°dH

m-value = 6 – 7.5 mmol/l

LSI-value < 2.5

Operating temperature (max.) = 60°C

### Characteristics

- **hs 20** is an excellent hardness stabiliser and highly effective against calcium and magnesium carbonate deposits.
- It provides good cathodic corrosion protection for carbon steel.
- It disperses iron oxides and other suspended solids.
- It has excellent thermal stability.
- It is resistant against chlorine and compatible with most biocides.
- It can be analytically detected.

Appearance:	colourless to slightly yellow liquid
Density:	1.1 kg/m <sup>3</sup>
pH value:	3-4
Water solubility:	unlimited

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

### Dosage

**hs 20** can be fed into the system in any location from where it can rapidly spread throughout the entire circuit. The dosing rate depends on the type of the system and technical data. The standard dosing rate for hardness stabilisation is 100 g/m<sup>3</sup>. Initial passivation with double concentration is recommended during the first two weeks of operation. To provide corrosion protection for carbon steel, the standard dosing rate is 200 g/m<sup>3</sup>.

### Handling

Information about suitable personal protective measures is provided on the material safety data sheet.

### Important information

A material safety data sheet is included with each of our products. 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 and 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

1 year in an unopened container.

3 months in an opened container.

The data applies to the following storage conditions: cool (5-20°C), frost-free, dark and dry conditions.

### Packaging

**hs 20** is available in 10 kg and 25 kg canisters and in 200 kg barrels.

All of the descriptions, information and data contained herein are believed to be accurate and reliable. However, they do not constitute a warranty, express or implied warranty of any properties, nor do they represent a commitment to the 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 a 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.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

**hs 20**

Revision date: 22.11.2016

Page 1 of 9

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

#### 1.1. Product identifier

hs 20

#### Product code:

gwkhs20

#### 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**

The mixture is not classified as hazardous within the meaning of Regulation (EC) No 1272/2008.

#### 2.2. Label elements

**Regulation (EC) No. 1272/2008**

##### Hazard components for labelling

None.

**Signal word:** None

**Pictograms:** None

**hs 20**

Revision date: 22.11.2016

Page 2 of 9

**Hazard statements**

H290 Safety data sheet available on request.

**Precautionary statements**

None.

**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]			
6419-19-8	Amino-tris (methylenephosphonic acid)			< 10 %
	229-146-5			
	Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H315 H319 H335			

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**

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**hs 20**

Revision date: 22.11.2016

Page 3 of 9

**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.

## hs 20

Revision date: 22.11.2016

Page 4 of 9

### 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
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.

**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: yellow  
 Odour: characteristic

pH-Value (at 20 °C):

**Changes in the physical state**

**Test method**

3 - 4 DIN 19268

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

hs 20

Revision date: 22.11.2016

Page 5 of 9

Melting point: - 2 °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****Toxicokinetics, 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
619-19-5	Amino-tris (methylenephosphonic acid)			
	oral	LD50 5.900 mg/kg	Rat	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.

**Irritation and corrosivity**

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

**Sensitising effects**

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



## Safety Data Sheet

according to Regulation (EC) No 1907/2006

hs 20

Revision date: 22.11.2016

Page 7 of 9

**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:**

.

**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:**

.

Hazard label:

.

Classification code:

.

Special Provisions:

.

Limited quantity:

.

Excepted quantity:

.

Transport category:

.

Hazard No:

.

Tunnel restriction code:

.

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

.

**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:

.

Classification code:

.

Special Provisions:

.

Limited quantity:

.

Excepted quantity:

.

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

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**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:**

.

Hazard label:

.

Special Provisions:

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## Safety Data Sheet

according to Regulation (EC) No 1907/2006

**hs 20**

Revision date: 22.11.2016

Page 8 of 9

Limited quantity: .  
 Excepted quantity: .  
 EmS: .

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

**14.1. UN number:** .  
**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

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

### Other applicable information

## 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)

H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.  
 EUH210 Safety data sheet available on request.

### 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.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### hs 20

Revision date: 22.11.2016

Page 9 of 9

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.)*