

Product information BA 4 (sterilizing agent)

Use

BA 4 is an oxidising sterilizing agent for use in atmospherically open industrial cooling water and evaporation systems. Application in hermetically closed or pressure-imposed systems is not permitted.

Features

Appearance:	Clear, colourless fluid
Density (at 20°C)	1.13 g/cm
Boiling range:	108°C
Melting range:	-33°C
pH-value:	1.5 - 4
Content (H ₂ O ₂):	35%

This information does not constitute product information, it merely serves as information.

Dosing

Dosing frequency and application concentration depends on local conditions. This includes the extent of microbiological contamination as well as type and size of the system. BA 4 can be dosed directly from the delivered container by means of a suitable dosing device. The dosing point should be selected in a way that good mixing and distribution in the cooling water system is ensured. The standard dosing rate is 100 – 200 ppm in the form of one weekly surge dosing.

Handling precautions

Keep away from flammable substances. Do not inhale vapours. Wear suitable protective gloves and protective goggles/face protection. In case of skin contact, immediately rinse with plenty of water. In case of eye contact, rinse thoroughly with water and consult a doctor. Residues and small splashes can be washed off with water. Larger quantities must be collected in suitable containers and destroyed. The storage location must be cool, well ventilated, not flammable, lockable, dry and dark. Protect container from direct sunlight and heat. Further information is included in the safety data sheet. Use biocides safely. Before use, always read marking and product information.

Important Information

Each of our products is supplied with a safety data sheet. Safety data sheets contain important information for occupational health and safety and for health protection; they are

used by our customers to generate the necessary work instructions in order to protect their staff and customers against dangerous effects when handling the substances. Before using gwk products in your plant, ensure that the safety data sheet have been read and understood by your supervising staff and the staff in charge.

Shelf life

3 months in originally sealed containers.
3 months in opened containers.
Storage conditions: cool (5°C – 20°C), frost-free, dark and dry.

Packaging

BA4 is available in 10kg PE jerrycans, 30kg PE jerrycans and 200kg PE drums.

All statements, information and data presented herein are believed to be accurate and reliable but are not to be taken as a guarantee, express warranty or implied warranty of merchantability of fitness for a particular purpose, or representation, express or implied, for which seller assumes legal responsibility, and they are offered solely for your consideration, investigation and verification. Statements or suggestions concerning possible use of this product are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent.

Safety Data Sheet

Revision date: 10.04.2019

according to Regulation (EC) No. 1907/2006 (REACH)
according to Regulation (EU) No 2015/830

Issue date: 10.04.2019

Product name: ba 4

Version: 7.4

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. product identifiers**

Identification of the substance or mixture ba 4

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.3. Details of the supplier of the safety data sheet****supplier (manufacturer/importer/downstream user/distributor)**

gwk Gesellschaft Wärme Kältetechnik mbH

Scherl 10

D-58540 Meinerzhagen

Telephone: +49 2354 7060 0

Telefax: +49 2354 7060 156

E-mail

info@gwk.com**1.4. Emergency telephone number**

Emergency telephone number

Poison Emergency Call Berlin +49 (0) 30 30686700

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008 [CLP]**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Acute Tox. 4 / H302

Acute toxicity (oral)

Harmful if swallowed.

Acute Tox. 4 / H332

Acute toxicity (inhalative)

Harmful if inhaled.

Skin Irrit. 2 / H315

skin corrosion/irritation

Causes skin irritation.

Eye Dam. 1 / H318

Serious eye damage/eye irritation

Causes serious eye damage.

STOT SE 3 / H335

Specific target organ toxicity (single exposure)

May cause respiratory irritation.

2.2. Label elements

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

Labelling according to Regulation (EC) No. 1272/2008 [CLP]**Hazard pictograms****Danger****Hazard statements**

H302

Harmful if swallowed.

H332

Harmful if inhaled.

H315

Causes skin irritation.

H318

Causes serious eye damage.

H335

May cause respiratory irritation.

Precautionary statements

P260

Do not breathe vapour.

P280

Wear protective gloves and eye/face protection.

P301 + P312

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302 + P352

IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

contains:

hydrogen peroxide solution

Supplemental Hazard information (EU)

not applicable

2.3. Other hazards

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SECTION 3: Composition / information on ingredients**3.2. Mixtures****Product description / chemical characterization****Description****Hazardous ingredients****Classification according to Regulation (EC) No 1272/2008 [CLP]**

EC No.	REACH No. Chemical	Wt %
CAS No.	name classification: //	
INDEX No.	Remark	
231-765-0	01-2119485845-22	
7722-84-1	hydrogen peroxide solution	25 - 50
008-003-00-9	Acute Tox. 4 H302 / Acute Tox. 4 H332 / Skin Irrit. 2 H315 / Eye Dam. 1 H318 / STOT SE 3 H335 / Ox. Liq. 1 H271	

Additional information

Full text of classification: see section 16

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

In all cases of doubt, or when symptoms persist, seek medical advice.

In case of unconsciousness give nothing by mouth, place in recovery position and seek medical advice.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Following skin contact

Take off immediately all contaminated clothing.

Wash immediately with: WaterWash immediately with: Water

After eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Seek medical advice immediately.

After ingestion

If swallowed, rinse mouth with water (only if the person is conscious).

Seek medical advice immediately.

Keep victim calm.

Do NOT induce vomiting.

Self-protection of the first aider

First aider: Pay attention to self-protection!

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

In all cases of doubt, or when symptoms persist, seek medical advice.

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

Treat symptomatically.

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

Water, Foam, Water spray jetCo-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons:

carbon dioxide, Extinguishing powder

5.2. Special hazards arising from the substance or mixture

The product itself does not burn.

OxidizingDanger of bursting container.

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5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Cool closed containers that are near the source of the fire. Do not allow water used to extinguish fire to enter drains, ground or waterways.

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

Use personal protection equipment. Provide adequate ventilation. Do not breathe vapours.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. If the product contaminates lakes, rivers or sewages, inform competent authorities in accordance with local regulations.

6.3. Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13). Sawdust, Fabric

6.4. Reference to other sections

Observe protective provisions (see section 7 and 8).

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

Avoid contact with eyes and skin. If handled uncovered, arrangements with local exhaust ventilation should be used if possible. Handle and open container with care. When using do not eat, drink or smoke.

Precautions against fire and explosion:

Only use containers specifically approved for the substance/product. Do not keep the container sealed.

7.2. Conditions for safe storage, including any incompatibilities**Packaging materials:**

Unsuitable container/equipment material: No data available

Requirements for storage rooms and vessels

Keep in a cool, well-ventilated place.

Hints on joint storage

Do not store together with: Alkali (lye) Reducing agent, Organic solvents:

Further information on storage conditions

Take care of instructions on label.

7.3. Specific end use(s)

Observe technical data sheet. Observe instructions for use.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limit values**

not applicable

DNEL:

hydrogen peroxide solution

INDEX No. 008-003-00-9 / EC No. 231-765-0 / CAS No. 7722-84-1

DNEL acute inhalative (local), Workers: 3 mg/m³

DNEL long-term inhalative (local), Workers: 1,4 mg/m³

PNEC:

hydrogen peroxide solution

INDEX No. 008-003-00-9 / EC No. 231-765-0 / CAS No. 7722-84-1

PNEC aquatic, freshwater: 0,0126 mg/l

PNEC aquatic, marine water: 0,0126 mg/l

PNEC sediment, freshwater: 0,047 mg/kg

PNEC sediment, marine water: 0,047 mg/kg

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PNEC, soil: 0,0023 mg/kg

PNEC sewage treatment plant (STP): 4,66 mg/l

8.2. Exposure controls

Provide good ventilation. This can be achieved with local or room suction. If this should not be sufficient to keep aerosol and solvent vapour concentration below the exposure limit values, a suitable respiratory protection must be used.

Occupational exposure controls**Respiratory protection**

If concentration of solvents is beyond the occupational exposure limit values, approved and suitable respiratory protection must be used. Observe the wear time limits according GefStoffV in combination with the rules for using respiratory protection apparatus (BGR 190). Use only respiratory protection equipment with CE-symbol including four digit test number.

Hand protection

For prolonged or repeated handling the following glove material must be used: Butyl caoutchouc (butyl rubber)

Thickness of the glove material > 0,4 mm ; Breakthrough time (maximum wearing time) > 480 min.

Observe the instructions and details for use, storage, maintenance and replacement provided by the protective glove manufacturer. Penetration time of glove material depending on intensity and duration of exposure to skin. Recommended glove articles DIN EN 374

Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Eye protection

Wear closely fitting protective glasses in case of splashes.

Protective clothing

Wear antistatic clothing of natural fibers (cotton) or heat resistant synthetic fibers.

Protective measures

After contact clean skin thoroughly with water and soap or use appropriate cleanser.

Environmental exposure controls

Do not allow to enter into surface water or drains. See chapter 7. No additional measures necessary.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance:**

Physical state: Liquid
Colour: colourless

Odour: characteristic

Odour threshold: not applicable

pH at20 °C: 3

Melting point/freezing point: -32 °C

Initial boiling point and boiling range: 108 °C

Flash point: not applicable

Evaporation rate: not applicable

Flammability (solid, gas):

Burning time (s): not applicable

Upper/lower flammability or explosive limits:

Lower explosion limit: not applicable

Upper explosion limit: not applicable

Vapour pressure at20 °C: 30 mbar

Vapour density: not applicable

Relative density:

Density at20 °C: 1,13 g/cm³

Solubility(ies):

Water solubility (g/L) at20 °C: 999

Partition coefficient: n-octanol/water: see section 12

Auto-ignition temperature: not applicable

Decomposition temperature: not applicable

Viscosity at20 °C: 1,1 mPa·s

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Explosive properties: not applicable**Oxidising properties:** not applicable9.2. **Other information****Solid content (%):** 0,00 Wt %**solvent content:****Organic solvents:** 0 Wt %**Water:** 0 Wt %**SECTION 10: Stability and reactivity**10.1. **Reactivity**10.2. **Chemical stability**

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.3. **Possibility of hazardous reactions**

Keep away from strong acids, strong bases and strong oxidizing agents to avoid exothermic reactions.

10.4. **Conditions to avoid**

Stable when applying the recommended regulations for storage and handling. Further information on correct storage: refer to section 7.

10.5. **Incompatible materials**10.6. **Hazardous decomposition products**

Hazardous decomposition byproducts may form with exposure to high temperatures.

SECTION 11: Toxicological information

Classification according to Regulation (EC) No 1272/2008 [CLP]

No data on preparation itself available.

11.1. **Information on toxicological effects****Acute toxicity**

Hydrogen peroxide 35 % not for biocidal use

oral, LD50, Rat: 1193 - 1270 mg/kg

inhalative (vapours), LC50, Rat: (4 h)

hydrogen peroxide solution

oral, LD50, Rat: > 500 mg/kg

Values refer to diluted substance (49,9%)

dermal, LD50, Rabbit: > 4000 mg/kg

Values refer to diluted substance (49,9%)

inhalative (vapours), LC50, Rat: 2 mg/l (4 h)

skin corrosion/irritation; Serious eye damage/eye irritation

Hydrogen peroxide 35 % not for biocidal use

Skin

eyes

hydrogen peroxide solution

Skin

Causes skin irritation.

Respiratory or skin sensitisation

hydrogen peroxide solution

Skin:

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Toxicological data are not available.

Specific target organ toxicity

Hydrogen peroxide 35 % not for biocidal use

Specific target organ toxicity (single exposure), Irritation:

hydrogen peroxide solution

Specific target organ toxicity (single exposure), Irritation:

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Aspiration hazard

Toxicological data are not available.

Practical experience/human evidence

Other observations:

Overall Assessment on CMR properties

The ingredients in this mixture do not meet the criteria for classification as CMR category 1A or 1B according to CLP.

Remark

There is no information available on the preparation itself .

SECTION 12: Ecological information**overall evaluation**

Classification according to Regulation (EC) No 1272/2008 [CLP]

12.1. Toxicity

hydrogen peroxide solution

Fish toxicity, LC50, Pimephales promelas: 22 - 33 mg/l (96 h)

Daphnia toxicity, EC50, Daphnia magna (Big water flea): 2,4 - 7,7 mg/l (48 h)

Acute (short-term) fish toxicity, LC50:, Oncorhynchus mykiss (Rainbow trout): 38,5 mg/l (168 h)

Acute (short-term) fish toxicity, LC50:, Leuciscus idus (golden orfe): 35 mg/l (48 h)

Algae toxicity, LC50:: > 1,7 mg/l

Long-term Ecotoxicity

Toxicological data are not available.

12.2. Persistence and degradability

Toxicological data are not available.

12.3. Bioaccumulative potential

hydrogen peroxide solution

Partition coefficient: n-octanol/water: -1,57

Bioconcentration factor (BCF)

Toxicological data are not available.

12.4. Mobility in soil

Toxicological data are not available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Appropriate disposal / Product Recommendation**

Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

packaging**Recommendation**

Non-contaminated packages may be recycled. Vessels not properly emptied are special waste.

SECTION 14: Transport information**14.1. UN number**

UN 2014

14.2. UN proper shipping name

Land transport (ADR/RID):

Hydrogen peroxide, aqueous solution
(Hydrogen Peroxide)

Sea transport (IMDG):

HYDROGEN PEROXIDE, AQUEOUS SOLUTION
(Hydrogen Peroxide)

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

Hydrogen peroxide, aqueous solution

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(Hydrogen Peroxide)

14.3. Transport hazard class(es)

5.1 (8)

14.4. Packing group

II

14.5. Environmental hazards

Land transport (ADR/RID)

not applicable

Marine pollutant

not applicable

14.6. Special precautions for user

Transport always in closed, upright and safe containers. Make sure that persons transporting the product know what to do in case of an accident or leakage.

Advices on safe handling: see parts 6 - 8

Further information
Land transport (ADR/RID)

tunnel restriction code

E

Sea transport (IMDG)

EmS-No.

F-H,S-Q

Air transport (ICAO-TI / IATA-DGR)
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU legislation
Directive 2010/75/EU on industrial emissions

VOC-value (in g/L): 0

National regulations
Restrictions of occupation

Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC).

Substance/product listed in the following inventories:
15.2. Chemical Safety Assessment

EC No. CAS No.	Chemical name	REACH No.
231-765-0 7722-84-1	hydrogen peroxide solution	01-2119485845-22

SECTION 16: Other information
Full text of classification in section 3:

Acute Tox. 4 / H302

Acute toxicity (oral)

Harmful if swallowed.

Acute Tox. 4 / H332

Acute toxicity (inhalative)

Harmful if inhaled.

Skin Irrit. 2 / H315

skin corrosion/irritation

Causes skin irritation.

Eye Dam. 1 / H318

Serious eye damage/eye irritation

Causes serious eye damage.

STOT SE 3 / H335

Specific target organ toxicity (single exposure)

May cause respiratory irritation.

Ox. Liq. 1 / H271

Oxidising liquids

May cause fire or explosion; strong oxidiser.

Abbreviations and acronyms

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

Further information

Classification according to Regulation (EC) No 1272/2008 [CLP]

The information supplied on this safety data sheet complies with our current level of knowledge as well as with national and

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EU regulations. Without written approval, the product must not be used for purposes different from those mentioned in chapter 1.1. It is always the user's duty to take any necessary measures for meeting the requirements laid down by local rules and regulations. The details in this safety data sheet describe the safety requirements of our product and are not to be regarded as guaranteed attributes of the product.