Product information ba 2 (biocide)

**Use**
ba 2 is a very concentrated liquid broadspectrum biocide for control of slime forming bacteria, fungi and algae in industrial water systems such as recirculating water systems, pasteurizers, air washer systems, membrane separation systems and evaporative condensers. ba 2 provides extremely rapid killing and is recommended in waters with a pH between 6-8.5. ba 2 must be used within 3 months.

**Features**
- **Appearance:** amber liquid
- **pH:** 2.5
- **Density:** 1.200 kg/m³
- **Flash point:** > 159°C
- **Solubility:** completely miscible in water

These data are to be seen as typical values and should not be considered as specifications.

**Dosing**
ba 2 should be dosed directly into the sump or basin or any other location where good distribution can be assured. For membrane separation systems ba 2 should be applied discontinuously to the feed water prior to the membranes. The dosage rate depends upon the type of system and the severity of fouling. Typical dosages vary between 100 – 200 ppm

**Handling precautions**
Avoid breathing vapours. Wear suitable protective gloves and safety goggles. In case of contact immediately flush with water. After eye contact seek medical advice. Small spills can be flushed with water. Large spills should be collected for disposal. Before use review the Material Safety Data Sheet for additional information. Use ba 2 safely. Always read label and product information before use.

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

**Packaging**
ba 2 is available in 10kg, 30kg PE jerrycans and 240kg PE drums.

**Important Information**
gwk maintains Material Safety Data Sheets on all of its chemical products. Material Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers. Our Material Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using gwk products in your facilities.

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

1.1 Product identifier
   Trade name : BA 2
               MICROBIOCIDE

1.2 Recommended use of the chemical and restrictions on use
   Use of the Substance/Mixture : Biocidal product

1.3 Details of the supplier of the safety data sheet
   gwk Gesellschaft Wärme Kältetechnik
   Scherl 10
   58540 Meinerzhagen
   Deutschland

   info@gwk.com

1.4 Emergency telephone number
   Berlin +49 (0)30 / 306 867 90
   Product Information
   +49 2354 7060 0 (in Germany)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

2.2 Label elements

   Labelling (REGULATION (EC) No 1272/2008)
   Hazard pictograms :

   Signal word : Danger

   Hazard statements :
   H302 + H332 Harmful if swallowed or if inhaled
   H315 Causes skin irritation.
   H317 May cause an allergic skin reaction.
   H318 Causes serious eye damage.
   H411 Toxic to aquatic life with long lasting effects.

   Precautionary statements :
   Prevention:
   P261 Avoid breathing dust/ fume/ gas/ mist/
SAFETY DATA SHEET

Trade name: BA 2

P273 Avoid release to the environment.
P280 Wear eye protection/ face protection
P280 Wear protective gloves.
Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Hazardous components which must be listed on the label:
2,2-Dibromo-2-cyanoacetamide

2.3 Other hazards
This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).
Additional advice
No information available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2-Dibromo-2-cyanoacetamide</td>
<td>10222-01-2</td>
<td>233-539-7</td>
<td>Acute Tox.3; H301 Acute Tox.2; H330 Skin Irrit.2; H315 Eye Dam.1; H318 Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410</td>
<td>&gt;= 15 - &lt; 20</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Move out of dangerous area. Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled:
- Move to fresh air.
- IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
- Keep patient warm and at rest.
- If unconscious place in recovery position and seek medical advice.

In case of skin contact:
- Remove contaminated clothing. If irritation develops, get medical attention.
- If on skin, rinse well with water.
- Wash contaminated clothing before re-use.

In case of eye contact:
- In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Continue rinsing eyes during transport to hospital.
- Remove contact lenses.
- Protect unharmed eye.

If swallowed:
- Obtain medical attention.
- Do NOT induce vomiting.
- Rinse mouth with water.
- Do not give milk or alcoholic beverages.
- Never give anything by mouth to an unconscious person.
- If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms:
- Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:
  - irritation (nose, throat, airways)
  - Headache

Risks:
- Harmful if swallowed or if inhaled
- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment:
- Probable mucosal damage may contraindicate the use of gastric lavage.
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Water spray
- Foam
- Carbon dioxide (CO2)
- Dry chemical

Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: If product is heated above its flash point it will produce vapors sufficient to support combustion. Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near the point of release. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products: carbon dioxide and carbon monoxide, aldehydes, alcohols, ethers, organic acids, bromine, nitrogen oxides (NOx)

5.3 Advice for firefighters

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

Specific extinguishing methods: Product is compatible with standard fire-fighting agents.

Further information: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Use personal protective equipment.
Ensure adequate ventilation. 
Persons not wearing protective equipment should be excluded 
from area of spill until clean-up has been completed. 
Comply with all applicable federal, state, and local regulations.

6.2 Environmental precautions

Environmental precautions: Prevent product from entering drains. 
Prevent further leakage or spillage if safe to do so. 
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, 
acid binder, universal binder, sawdust). 
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For further information see Section 8 and Section 13 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Do not breathe vapours/dust. 
Do not smoke. 
Persons susceptible to skin sensitisation problems or asthma, 
allergies, chronic or recurrent respiratory disease should not 
be employed in any process in which this mixture is being used. 
Container hazardous when empty. 
Avoid exposure - obtain special instructions before use. 
Avoid contact with skin and eyes. 
Smoking, eating and drinking should be prohibited in the 
application area. 
For personal protection see section 8. 
Dispose of rinse water in accordance with local and national 
regulations.

Advice on protection against 
fire and explosion: Normal measures for preventive fire protection.

Hygiene measures: Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical
installations / working materials must comply with the technological safety standards.

Other data : No decomposition if stored and applied as directed.

7.3 Specific end use(s)
Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures
Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Eye protection : Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist.
Maintain eye wash station in immediate work area.

Hand protection

Remarks : Wear resistant gloves such as: Nitrile rubber butyl-rubber
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Wear as appropriate: impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Discard gloves that show tears, pinholes, or signs of wear.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Aqueous solution
Colour : amber

Odour : slight

Odour Threshold : No data available

pH : ca. 2.9, (25 °C)

Melting point/freezing point : < -20 °C

Boiling point/boiling range : > 120 °C

Flash point : 162 °C
   Method: Pensky Martens closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : 12.9 % (V)

Lower explosion limit : 2.9 % (V)

Vapour pressure : 22,665 hPa
   Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : ca. 1.185 (25 °C)

Density : ca. 1.185 g/cm³ (25 °C)

Solubility(ies)
   Water solubility : No data available

   Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Thermal decomposition : No data available

Viscosity
   Viscosity, dynamic : No data available

   Viscosity, kinematic : No data available

Oxidizing properties : No data available
9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No decomposition if stored and applied as directed.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions : Product will not undergo hazardous polymerization.

10.4 Conditions to avoid
Conditions to avoid : excessive heat
UV light.
Exposure to sunlight.
Exposure to moisture

10.5 Incompatible materials
Materials to avoid : Bases
reducing agents
Strong acids
strong bases
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products : Bromine
Nitrogen oxides (NOx)

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Information on likely routes of exposure : Inhalation
Skin contact
Eye Contact
Ingestion

Acute toxicity
Harmful if swallowed or if inhaled

Product:
Acute oral toxicity : Remarks: Harmful if swallowed.

Components:
2,2 DIBROMO-3-NITRILOPROPIONAMIDE:
Acute oral toxicity : LD 50 (Rat, male): 235 mg/kg
LD 50 (Rat, female): 178 mg/kg
Acute inhalation toxicity : LC 50 (Rat): 0,32 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD 50 (Rabbit): > 2 g/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

Skin corrosion/irritation
Causes skin irritation.
Product:
Result: Repeated exposure may cause skin dryness or cracking.
Remarks: May cause skin irritation and/or dermatitis.

Components:
2,2 DIBROMO-3-NITRILOPROPIONAMIDE:
Species: Rabbit
Result: Irritating to skin

Serious eye damage/eye irritation
Causes serious eye damage.
Product:
Result: Risk of serious damage to eyes.
Remarks: May cause irreversible eye damage.

Components:
2,2 DIBROMO-3-NITRILOPROPIONAMIDE:
Species: Rabbit
Result: Corrosive to eyes

Respiratory or skin sensitisation
Skin sensitisation: May cause an allergic skin reaction.
Respiratory sensitisation: Not classified based on available information.
Remarks: May cause allergic skin reaction.

Components:
2,2 DIBROMO-3-NITRILOPROPIONAMIDE:
Genotoxicity in vitro
Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test species: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: Chromosome aberration test in vitro
Test species: Human lymphocytes
Metabolic activation: with and without metabolic activation
Result: positive

Test Type: unscheduled DNA synthesis assay
Test species: rat hepatocytes
Result: negative

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information
### SECTION 12: Ecological information

#### 12.1 Toxicity

**Components:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>Toxicity to algae</th>
<th>Toxicity to fish (Chronic toxicity)</th>
<th>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2-Dibromo-2-cyanoacetamide</td>
<td>LC 50 (Oncorhynchus mykiss (rainbow trout)): 1,0 mg/l Exposure time: 96 h</td>
<td>EC 50 (Water flea (Daphnia magna)): 0,86 mg/l Exposure time: 48 h</td>
<td>EC 50 (Pseudokirchneriella subcapitata (green algae)): 0,30 mg/l Exposure time: 72 h</td>
<td>0,47 - 0,98 mg/l Species: Oncorhynchus mykiss (rainbow trout)</td>
<td>NOEC: 0,02 mg/l Species: Water flea (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td>LC 50 (Bluegill (Lepomis macrochirus)): 2,3 mg/l Exposure time: 96 h</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 12.2 Persistence and degradability

**Components:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Biodegradability</th>
<th>Remarks: Readily biodegradable</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2-Dibromo-2-cyanoacetamide</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 12.3 Bioaccumulative potential

**Product:**

<table>
<thead>
<tr>
<th>Bioaccumulation</th>
<th>Remarks: The bioaccumulation potential cannot be determined.</th>
</tr>
</thead>
</table>

**Components:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Partition coefficient: n-octanol/water</th>
<th>Pow: 6,31 pH: 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,2-Dibromo-2-cyanoacetamide</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

Product:
Assessment
: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
: This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:
Additional ecological information
: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging
: Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

ADR: UN3265
ADNR: UN3265
RID: UN3265
INTERNATIONAL MARITIME DANGEROUS GOODS: UN3265
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: UN3265
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: UN3265
ADR: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-2-CYANOACETAMIDE)
ADNR: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-2-CYANOACETAMIDE)
RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-2-CYANOACETAMIDE)

INTERNATIONAL MARITIME DANGEROUS GOODS: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (2,2-DIBROMO-2-CYANOACETAMIDE)
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-2-CYANOACETAMIDE)
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Corrosive liquid, acidic, organic, n.o.s. (2,2-DIBROMO-2-CYANOACETAMIDE)

14.3 Transport hazard class(es)

ADR: 8
ADNR: 8
RID: 8

INTERNATIONAL MARITIME DANGEROUS GOODS: 8
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: 8
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: 8

14.4 Packing group

ADR: III
ADNR: III
RID: III

INTERNATIONAL MARITIME DANGEROUS GOODS: III
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: III
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: III

14.5 Environmental hazards

ADR: Not applicable
ADNR: Not applicable
RID: Not applicable

INTERNATIONAL MARITIME DANGEROUS GOODS: Not applicable
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO: Not applicable
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER: Not applicable

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Ship Type: Not applicable
Hazard code(s): Not applicable
Pollutant Category: Not applicable

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.
SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 57).
: Not applicable

REACH - List of substances subject to authorisation (Annex XIV)
: Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)
: Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants
: Not applicable


<table>
<thead>
<tr>
<th>Quantity 1</th>
<th>Quantity 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 t</td>
<td>500 t</td>
</tr>
</tbody>
</table>

Other regulations
: Young people under 18 years old are not allowed to work with this product according to the EU Directive 94/33/EC on the protection of young people at work.

The components of this product are reported in the following inventories:

- TSCA : On TSCA Inventory
- DSL : All components of this product are on the Canadian DSL.
- AUSTRI : On the inventory, or in compliance with the inventory
- NZIOC : On the inventory, or in compliance with the inventory
- ENCS : On the inventory, or in compliance with the inventory
- KECL : On the inventory, or in compliance with the inventory PHIL
- IECSC : On the inventory, or in compliance with the inventory
15.2 Chemical Safety Assessment

No data available

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H301 Toxic if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H400 Very toxic to aquatic life.

Further information

Other information : The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Sources of key data used to compile the Safety Data Sheet

Key literature references and sources of data
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists
BEI : Biological Exposure Index
CAS : Chemical Abstracts Service (Division of the American Chemical Society).
CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
FG : Food grade
GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
H-statement : Hazard Statement
IATA : International Air Transport Association.
IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).
ICAO : International Civil Aviation Organization
SAFETY DATA SHEET

Trade name: BA 2

ICAO-TI (ICAO): Technical Instructions by the “International Civil Aviation Organization”
IMDG: International Maritime Code for Dangerous Goods
ISO: International Organization for Standardization
logPow: Octanol-water partition coefficient
LCxx: Lethal Concentration, for xx percent of test population
LDxx: Lethal Dose, for xx percent of test population
ICxx: Inhibitory Concentration for xx of a substance
Ecxx: Effective Concentration of xx
N.O.S.: Not Otherwise Specified
OECD: Organization for Economic Co-operation and Development
OEL: Occupational Exposure Limit
P-Statement: Precautionary Statement
PBT: Persistent, Bioaccumulative and Toxic
PPE: Personal Protective Equipment
STEL: Short-term exposure limit
STOT: Specific Target Organ Toxicity
TLV: Threshold Limit Value
TWA: Time-weighted average
vPvB: Very Persistent and Very Bioaccumulative
WEL: Workplace Exposure Level

ABM: Water Hazard Class for the Netherlands
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
ADNR: Regulation for the Carriage of Dangerous Substances on the Rhine
CLP: Classification, Labelling and Packaging
CSA: Chemical Safety Assessment
CSR: Chemical Safety Report
DNEL: Derived No Effect Level.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances
PEC: Predicted Effect Concentration
PEL: Permissible Exposure Limits
PNEC: Predicted No Effect Concentration
R-phrase: Risk phrase
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail
S-phrase: Safety phrase
WGK: German Water Hazard Class