SAFETY DATA SHEET
MARBLES REAGENT


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

1.1. Product identifier
Product name                 MARBLES REAGENT
Product number               2418

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses               Laboratory reagent.
Uses advised against         No specific uses advised against are identified. Use only for intended applications.

1.3. Details of the supplier of the safety data sheet
Supplier
Reagent Chemical Services
11b - 13 Aston Fields Road
Whitehouse Industrial Estate
Runcorn
Cheshire WA7 3DL
T: 01928 716903 (08.30 - 17.00)
F: 01928 716425
E: info@reagent.co.uk

1.4. Emergency telephone number
Emergency telephone          OHES Environmental Ltd 24-7
                             Tel. 0333 333 9939 (24 hour)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards               Not Classified
Health hazards                  Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335
Environmental hazards          Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411

2.2. Label elements
Pictogram

Signal word                   Warning
MARBLES REAGENT

Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements
P261 Avoid breathing vapour/ spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/ container in accordance with national regulations.

Contains
HYDROCHLORIC ACID ...%

Supplementary precautionary statements
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/ doctor if you feel unwell.
P321 Specific treatment (see medical advice on this label).
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

2.3. Other hazards
This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>HYDROCHLORIC ACID ...%</th>
<th>10-30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 7647-01-0</td>
<td></td>
</tr>
<tr>
<td>EC number: 231-595-7</td>
<td></td>
</tr>
<tr>
<td>REACH registration number: 01-2119484862-27-0000</td>
<td></td>
</tr>
</tbody>
</table>

Classification
Skin Corr. 1B - H314
Eye Dam. 1 - H318
STOT SE 3 - H335
MARBLES REAGENT

<table>
<thead>
<tr>
<th>COPPER SULPHATE</th>
<th>5-10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 7758-98-7</td>
<td>EC number: 231-847-6</td>
</tr>
<tr>
<td>M factor (Acute) = 10</td>
<td>M factor (Chronic) = 1</td>
</tr>
</tbody>
</table>

Classification
Acute Tox. 4 - H302
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments
An aqueous solution of hydrochloric acid.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation
Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Ingestion
Rinse mouth thoroughly with water. Remove any dentures. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin contact
Rinse with water.

Eye contact
Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 10 minutes.

Protection of first aiders
First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

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

General information
See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
A single exposure may cause the following adverse effects: Irritation of nose, throat and airway. Difficulty in breathing. Coughing. Prolonged inhalation of high concentrations may damage respiratory system.

Ingestion
May cause irritation. Nausea, vomiting.

Skin contact
Redness. Irritating to skin. Prolonged contact may cause dryness of the skin.
MARBLES REAGENT

Eye contact
Irritating to eyes.

4.3. Indication of any immediate medical attention and special treatment needed
Notes for the doctor
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture
Specific hazards
Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances:
- Harmful gases or vapours. Hydrogen chloride (HCl).
- Chlorine.
- Sulphurous gases (SOx).
- Oxides of the following substances: Copper.

5.3. Advice for firefighters
Protective actions during firefighting
Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapours and protect men stopping the leak. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions
No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material. Avoid inhalation of vapours and spray/mists. Use suitable respiratory protection if ventilation is inadequate.

6.2. Environmental precautions
Environmental precautions
Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up
MARBLES REAGENT

Methods for cleaning up

Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Approach the spillage from upwind. Small Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage with sand, earth or other non-combustible material. Place waste in labelled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimise spills. Keep container tightly sealed when not in use. Avoid the formation of mists. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class

Chemical storage.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

HYDROCHLORIC ACID ...%

Long-term exposure limit (8-hour TWA): WEL 1 ppm  2 mg/m³  gas and aerosol mists
Short-term exposure limit (15-minute):  WEL 5 ppm  8 mg/m³  gas and aerosol mists
WEL = Workplace Exposure Limit
MARBLES REAGENT

HYDROCHLORIC ACID ...% (CAS: 7647-01-0)

DNEL
- Workers - Inhalation; Long term local effects: 8 mg/m³
- Workers - Inhalation; Short term local effects: 15 mg/m³
- General population - Inhalation; Long term local effects: 8 mg/m³
- General population - Inhalation; Short term local effects: 15 mg/m³

COPPER SULPHATE (CAS: 7758-98-7)

PNEC
- Fresh water; 0.0078 mg/l
- Marine water; 0.0052 mg/l
- STP; 0.23 mg/l
- Sediment (Freshwater); 0.087 mg/l
- Sediment (Marine water); 0.087 mg/l
- Soil; 65 mg/kg

8.2. Exposure controls

Protective equipment

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Appropriate engineering controls

Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended. It is recommended that gloves are made of the following material: Butyl rubber. Nitrile rubber. Polyvinyl chloride (PVC). The selected gloves should have a breakthrough time of at least 8 hours. Thickness: > 0.3 mm The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures

Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.
MARBLES REAGENT

Respiratory protection
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls
Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Blue</td>
</tr>
<tr>
<td>Odour</td>
<td>Pungent</td>
</tr>
<tr>
<td>pH</td>
<td>pH (concentrated solution): &lt;1</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not determined</td>
</tr>
<tr>
<td>Initial boiling point and range</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not relevant. The mixture is non-flammable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Evaporation factor</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not relevant.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Relative density</td>
<td>~ 1.12 @ 20°C</td>
</tr>
<tr>
<td>Bulk density</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Miscible with water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>The product contains mainly inorganic substances which are not biodegradable.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not determined</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not considered to be explosive.</td>
</tr>
<tr>
<td>Explosive under the influence of a flame</td>
<td>No</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not relevant. The mixture is not an oxidising material.</td>
</tr>
</tbody>
</table>

9.2. Other information
MARBLES REAGENT

Other information
None.

Refractive index
Not determined.

Particle size
Not relevant.

Molecular weight
Not relevant.

Volvatility
Not relevant.

Saturation concentration
Not determined.

Critical temperature
Not relevant.

Volatile organic compound
Not relevant.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity
The following materials may react with the product: Acids. Alkalis. Chemically-active metals.

10.2. Chemical stability
Stability
Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
May generate heat. In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air.

10.4. Conditions to avoid
Conditions to avoid
Avoid heat.

10.5. Incompatible materials
Materials to avoid
Alkalis. Acids. Chemically-active metals. May be corrosive to metals.

10.6. Hazardous decomposition products
Hazardous decomposition products
Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg)
481.0

Species
Rat

Notes (oral LD₅₀)
Based on available data the classification criteria are not met.

ATE oral (mg/kg)
58,823.53

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg)
2,000.0

Species
Rat

Notes (dermal LD₅₀)
Based on available data the classification criteria are not met.
MARBLES REAGENT

Species
Rat

Notes (inhalation LC₅₀)
Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data
Irritating.

Extreme pH
≤ 2 Corrosive.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory sensitisation
Based on available data the classification criteria are not met.

Skin sensitisation
Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - in vitro
Based on available data the classification criteria are not met.

Genotoxicity - in vivo
Based on available data the classification criteria are not met.

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

IARC carcinogenicity
None of the ingredients are listed or exempt.

Reproductive toxicity
Reproductive toxicity - fertility
Based on available data the classification criteria are not met.

Reproductive toxicity - development
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure
STOT SE 3 - H335 May cause respiratory irritation.

Target organs
Respiratory system, lungs

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Based on available data the classification criteria are not met.

General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
A single exposure may cause the following adverse effects: Irritation of nose, throat and airway. Difficulty in breathing. Coughing. Prolonged inhalation of high concentrations may damage respiratory system.

Ingestion
May cause irritation. Nausea, vomiting.

Skin contact
Redness. Irritating to skin.

Eye contact
Irritating to eyes.

Route of entry
Ingestion Inhalation Skin and/or eye contact

Target organs
Respiratory system, lungs
MARBLES REAGENT

HYDROCHLORIC ACID ...

Toxicological effects
The toxicity of this substance has been assessed during REACH registration.

Acute toxicity - oral
Notes (oral LD₅₀)
Scientifically unjustified. REACH dossier information.

Acute toxicity - dermal
Notes (dermal LD₅₀)
Scientifically unjustified. REACH dossier information.

Acute toxicity - inhalation
Acute toxicity inhalation (LC₅₀ dust/mist mg/l)
8.3
Species
Rat
Notes (inhalation LC₅₀)
REACH dossier information.

Skin corrosion/irritation
Animal data
Corrosive to skin. REACH dossier information.

Serious eye damage/irritation
Serious eye damage/irritation
Causes serious eye damage. REACH dossier information.

Respiratory sensitisation
Respiratory sensitisation
Scientifically unjustified.

Skin sensitisation
Skin sensitisation
Not sensitising. REACH dossier information.

Germ cell mutagenicity
Genotoxicity - in vitro
Negative. REACH dossier information.

Genotoxicity - in vivo
No specific test data are available. REACH dossier information.

Carcinogenicity
Carcinogenicity
NOAEL <10 ppm, Inhalation, Rat

Reproductive toxicity
Reproductive toxicity - fertility
Scientifically unjustified. REACH dossier information.

Reproductive toxicity - development
This substance has no evidence of toxicity to reproduction.

Specific target organ toxicity - single exposure
STOT - single exposure
No specific test data are available.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
No specific test data are available.

Aspiration hazard
Aspiration hazard
Not anticipated to present an aspiration hazard, based on chemical structure.

General information
Corrosive to skin.
MARBLES REAGENT

Inhalation  Irritating to respiratory system.
Ingestion  Corrosive. Small amounts may cause serious damage.
Skin contact  Causes burns.
Eye contact  This product is strongly corrosive. Causes serious eye damage.

COPPER SULPHATE

Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg)  481.0
Species  Rat
ATE oral (mg/kg)  481.0

Acute toxicity - dermal
Acute toxicity dermal (LD₅₀ mg/kg)  2,000.0
Species  Rat
ATE dermal (mg/kg)  5,000.0

Inhalation  Dust may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.
Ingestion  May cause irritation. Symptoms following overexposure may include the following: Stomach pain. Nausea, vomiting. Diarrhoea.
Skin contact  Irritating to skin.
Eye contact  Causes burns. A single exposure may cause the following adverse effects: Corneal damage.

Acute and chronic health hazards  Found to cause cancer in laboratory animals.

SECTION 12: Ecological Information

HYDROCHLORIC ACID ...%

Ecotoxicity  The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

COPPER SULPHATE

Ecotoxicity  Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.1. Toxicity
Toxicity  Aquatic Acute 1 - H400 Very toxic to aquatic life. Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.
MARBLES REAGENT

Acute toxicity - fish
LC₅₀, 96 hours: pH 3.5 - 3.25 , Lepomis macrochirus (Bluegill)

Acute toxicity - aquatic invertebrates
EC₅₀, 48 hours: pH 4.92 , Daphnia magna

Acute toxicity - aquatic plants
EC₅₀, 72 hours: pH 4.7 , Freshwater algae

Acute toxicity - microorganisms
EC₅₀, 3 hours: pH 5 - 5.5 , Activated sludge

Acute toxicity - terrestrial
Not available.

Chronic toxicity - fish early life stage
Not determined.

Short term toxicity - embryo and sac fry stages
Not determined.

Chronic toxicity - aquatic invertebrates
Scientifically unjustified.

COPPER SULPHATE

Acute aquatic toxicity
LE(C)₅₀ 0.01 < L(E)C₅₀ ≤ 0.1

M factor (Acute) 10

Acute toxicity - fish
LC₅₀, 96 hours: 0.0384 mg/l, Pimephales promelas (Fat-head Minnow)

Chronic aquatic toxicity
M factor (Chronic) 1

12.2. Persistence and degradability

Persistence and degradability
The product contains inorganic substances which are not biodegradable.

Phototransformation
Scientifically unjustified.

Stability (hydrolysis)
Scientifically unjustified.

Biodegradation
Scientifically unjustified.

Biological oxygen demand
Not relevant.

Chemical oxygen demand
Not relevant.

HYDROCHLORIC ACID ...

Persistence and degradability
The product is expected to be biodegradable.

Phototransformation
Not relevant.
Substance is inorganic.

Stability (hydrolysis)
Not relevant.

Biodegradation
Scientifically unjustified.

Biological oxygen demand
Not relevant.
# MARBLES REAGENT

**Chemical oxygen demand**  Not relevant.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential**  No data available on bioaccumulation.

**Partition coefficient**  The product contains mainly inorganic substances which are not biodegradable.

## HYDROCHLORIC ACID ...% 

### Bioaccumulative potential

The product is not bioaccumulating.

### Partition coefficient

Scientifically unjustified.

### 12.4. Mobility in soil

**Mobility**  The product is water-soluble and may spread in water systems. The product is non-volatile.

**Adsorption/desorption coefficient**  Not determined.

**Henry's law constant**  Not determined.

**Surface tension**  Not determined.

## HYDROCHLORIC ACID ...% 

### Mobility

The product is miscible with water and may spread in water systems.

**Adsorption/desorption coefficient**  Scientifically unjustified.

**Henry's law constant**  Not determined.

**Surface tension**  Scientifically unjustified.

### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment**  This product does not contain any substances classified as PBT or vPvB.

## HYDROCHLORIC ACID ...% 

### Results of PBT and vPvB assessment

This product does not contain any substances classified as PBT or vPvB.

### 12.6. Other adverse effects

**Other adverse effects**  None known.

## HYDROCHLORIC ACID ...% 

**Other adverse effects**  Not determined.

### SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

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13/16
MARBLES REAGENT

General information
The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods
Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General
For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

14.1. UN number
UN No. (ADR/RID) 3264
UN No. (IMDG) 3264
UN No. (ICAO) 3264

14.2. UN proper shipping name
Proper shipping name (ADR/RID) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(HYDROCHLORIC ACID, COPPER SUPHATE)
Proper shipping name (IMDG) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(HYDROCHLORIC ACID, COPPER SUPHATE)
Proper shipping name (ICAO) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(HYDROCHLORIC ACID, COPPER SUPHATE)
Proper shipping name (ADN) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.(HYDROCHLORIC ACID, COPPER SUPHATE)

14.3. Transport hazard class(es)
ADR/RID class 8
ADR/RID label 8
IMDG class 8
ICAO class/division 8

Transport labels

14.4. Packing group
ADR/RID packing group II
IMDG packing group II
ICAO packing group II
MARBLES REAGENT

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user
Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-A, S-B
Emergency Action Code 2X
Hazard Identification Number (ADR/RID) 80
Tunnel restriction code (E)

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

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations Health and Safety at Work etc. Act 1974 (as amended).
The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"].
EH40/2005 Workplace exposure limits.


Guidance Workplace Exposure Limits EH40.

15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS
None of the ingredients are listed or exempt.

SECTION 16: Other information
# MARBLES REAGENT

## Abbreviations and acronyms used in the safety data sheet

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road.</td>
</tr>
<tr>
<td>ADN</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</td>
</tr>
<tr>
<td>RID</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Rail.</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association.</td>
</tr>
<tr>
<td>ICAO-TI</td>
<td>Technical Instructions for the Safe Transport of Dangerous Goods by Air.</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods.</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service.</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate.</td>
</tr>
<tr>
<td>LC₅₀</td>
<td>Lethal Concentration to 50 % of a test population.</td>
</tr>
<tr>
<td>LD₅₀</td>
<td>Lethal Dose to 50% of a test population (Median Lethal Dose).</td>
</tr>
<tr>
<td>EC₅₀</td>
<td>50% of maximal Effective Concentration.</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic substance.</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and Very Bioaccumulative.</td>
</tr>
</tbody>
</table>

## Classification abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit.</td>
<td>= Eye irritation</td>
</tr>
<tr>
<td>Skin Irrit.</td>
<td>= Skin irritation</td>
</tr>
<tr>
<td>STOT SE</td>
<td>= Specific target organ toxicity-single exposure</td>
</tr>
<tr>
<td>Aquatic Acute</td>
<td>= Hazardous to the aquatic environment (acute)</td>
</tr>
<tr>
<td>Aquatic Chronic</td>
<td>= Hazardous to the aquatic environment (chronic)</td>
</tr>
</tbody>
</table>

## General information

This datasheet is not intended to be a replacement for a full risk assessment, these should always be carried out by competent persons.

## Key literature references and sources for data


## Classification procedures according to Regulation (EC) 1272/2008


## Training advice

Only trained personnel should use this material.

## Revision comments

Full revision

## Revision date

12/06/2019

## Revision

4

## Supersedes date

25/09/2014

## SDS number

11213

## SDS status

Approved.

## Hazard statements in full

H290 May be corrosive to metals.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H411 Toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.