



# SAFETY DATA SHEET

## Steam generator descaling agent & Sensia Arena

Material number 409591040

Revision date: 9/8/2017  
Version: 7  
Language: en-UN  
Date of print: 10/12/2017  
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### 1. Identification of the substance/mixture and of the company/undertaking

#### Product identifier

Trade name: Steam generator descaling agent & Sensia Arena  
This safety data sheet pertains to the following products:  
4697700M (descaling agent Sensia Arena 4x80g)  
46978000 (Sensia Arena care set 1x80g)  
14015000 (Steam generator descaling agent, F-digital deluxe descaling agent 6x80g)

#### Relevant identified uses of the substance or mixture and uses advised against

General use: DESCALERS

#### Details of the supplier of the safety data sheet

Company name: Grohe AG  
Street/POB-No.: Industriepark Edelburg  
Postal Code, city: 58675 Hemer  
Germany  
WWW: www.grohe.com  
E-mail: info@grohe.com  
Telephone: +49 (0)2372 93-0  
Telefax: +49 (0)2372 93-1322  
Dept. responsible for information:  
Telephone: +49 (0)2372 93-2037  
sustainability@grohe.com

#### Emergency telephone number

GIZ-Nord, Göttingen, Germany,  
Telephone: +49 551-19240

### 2. Hazards identification

#### Classification of the substance or mixture

#### GHS classification

Eye Irritation 2A Causes serious eye irritation.

#### Label elements



Signal word: **Warning**

Hazard statements: Causes serious eye irritation.



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### Precautionary statements:

Keep out of reach of children.

Wash hands and face thoroughly after handling.

Wear protective gloves/protective clothing/eye protection.

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

If eye irritation persists: Get medical advice/attention.

## 3. Composition / information on ingredients

### Substances

Chemical characterisation: C6 H8 O7 x H2O

Citric acid monohydrate

CAS-Number: 5949-29-1

RTECS-Number: GE7810000

## 4. First aid measures

In case of inhalation: Provide fresh air.

Following skin contact: Remove residues with soap and water.  
Change contaminated clothing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.  
Subsequently consult an ophthalmologist.

After swallowing: Rinse mouth and drink 2-4 cupfuls of water. Seek medical treatment in case of troubles.

### Most important symptoms and effects, both acute and delayed

Causes serious eye irritation.

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## 5. Firefighting measures

### Extinguishing media

Suitable extinguishing media:

Water fog, alcohol resistant foam, carbon dioxide, extinguishing powder.

### Special hazards arising from the substance or mixture

Product is combustible.

May form dangerous gases and vapours in case of fire.

In case of fire may be liberated: carbon monoxide and carbon dioxide.

### Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained breathing apparatus.

Additional information: Do not allow fire water to penetrate into surface or ground water.



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### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Avoid contact with the substance.  
Avoid generation of dust. Do not breathe dust.  
Wear appropriate protective equipment.

#### Environmental precautions

Do not allow to enter into ground-water, surface water or drains.

#### Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Final cleaning.  
Larger quantities to be stemmed and pumped into tanks.

### 7. Handling and storage

#### Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.  
Avoid generation of dust. Do not breathe dust.  
Avoid contact with skin and eyes.  
Wear appropriate protective equipment.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.

#### Storage

Requirements for storerooms and containers:

Not metal container.  
Store container tightly closed in a dry area.  
Protect against heat /sun rays.

Hints on joint storage:

Do not store together with oxidizing agents, alkalis, reducing agents or metals.  
Do not store together with combustible or self-igniting materials or any highly flammable solids.

Further details:

Avoid formation of dust/air mixtures because of explosion hazard.

### 8. Exposure controls/personal protection

#### Exposure controls

Provide good ventilation and/or an exhaust system in the work area.  
Dust should be exhausted directly at the point of origin.  
See also information in chapter 7, section storage.

#### Personal protection equipment

##### Occupational exposure controls

Respiratory protection:

With the formation of dust, use a dust mask.  
Possible alternatives: Particulates filter P1 according to EN 143.

Hand protection:

Protective gloves according to AS/NZS 2161.  
Glove material: nitrile rubber - Layer thickness: 0.11 mm.  
Breakthrough time: >480 min.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection:

Tightly sealed eye protectors according to AS/NZS 1337.



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Body protection: Wear suitable protective clothing.

General protection and hygiene measures:

Take off immediately all contaminated clothing. When using do not eat, drink or smoke.  
Avoid contact with skin and eyes. After work, wash hands and face.  
Have eye wash bottle or eye rinse ready at work place.

## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Appearance:	Form: solid, crystalline Colour: colourless up to white
Odour:	odourless
Odour threshold:	No data available
pH value:	at 10 g/L: 2.2 at 25 °C, 50 g/L: 1.85
Melting point/freezing point:	135 - 152 °C
Initial boiling point and boiling range:	(Decomposition)
Flash point/flash point range:	not applicable
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	No data available
Vapour pressure:	at 20 °C: $\leq 0.1$ hPa
Vapour density:	No data available
Density:	at 20 °C: 1.542 g/cm <sup>3</sup>
Solubility:	at 25 °C: (Ethanol) 49 g/L
Water solubility:	at 20 °C: approx. 1630 g/L
Partition coefficient: n-octanol/water:	at 20 °C: $-1.72 \log P(o/w)$ (OECD 117) Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.
Auto-ignition temperature:	No data available
Thermal decomposition:	> 170°C

### Additional information

Viscosity	-
Explosive properties:	Explosive dust-air mixtures may form.
Ignition temperature:	345 °C
Bulk density:	approx. 800 - 1000 kg/m <sup>3</sup>
Additional information:	Molar mass: 210.14 g/mol

## 10. Stability and reactivity

Reactivity:	Explosive dust-air mixtures may form.
Chemical stability:	Product is stable under normal storage conditions.
Possibility of hazardous reactions:	Reacts violently with oxidizing agents, reducing agents, metals and bases.



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Conditions to avoid: Protect from excessive heat. (Release of water of crystallization in case of warming.)  
Avoid formation of dust/air mixtures because of explosion hazard.

Incompatible materials: Strong oxidizing agents, reducing agents, metals, bases

Hazardous decomposition products:

In case of fire may be liberated: carbon monoxide and carbon dioxide.

Thermal decomposition: > 170°C

## 11. Toxicological information

### Information on toxicological effects

Acute toxicity: LD50 Rat, oral: (Substance anhydrous) 3000 mg/kg  
LD50 Mouse, oral: (Substance anhydrous) 5040 mg/kg  
LD50 Rat, intraperitoneal: (Substance anhydrous) 375 mg/kg  
LD50 Mouse, intraperitoneal: (Substance anhydrous) 961 mg/kg

Toxicological effects: Acute toxicity (oral): Based on available data, the classification criteria are not met.  
Acute toxicity (dermal): Based on available data, the classification criteria are not met.  
Acute toxicity (inhalative): Based on available data, the classification criteria are not met.  
Skin corrosion/irritation: Based on available data, the classification criteria are not met.  
Specific symptoms in animal studies (Rabbit): Not an irritant (OECD 404)  
Eye damage/irritation: Eye Irritation 2A = Causes serious eye irritation.  
Specific symptoms in animal studies (Rabbit): Causes serious eye irritation. (OECD 405)  
Sensitisation to the respiratory tract: 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: Based on available data, the classification criteria are not met.  
Mutagenicity (in-vitro, Ames test): negative (Lit.)  
Carcinogenicity: Based on available data, the classification criteria are not met.  
Reproductive toxicity: Based on available data, the classification criteria are not met.  
Effects on or via lactation: Based on available data, the classification criteria are not met.  
Specific target organ toxicity (single exposure): Based on available data, the classification criteria are not met.  
Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.  
Aspiration hazard: Based on available data, the classification criteria are not met.

### Symptoms

In case of inhalation: May cause irritations.  
In case of ingestion:  
After intake of large amounts: stomachache, cough, vomiting with blood.

### General remarks

Physiologically benign according to current data (not a mutagen, carcinogen or teratogen).



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## 12. Ecological information

### Toxicity

Aquatic toxicity: Harmful effects by modification of pH-value.  
Algae toxicity:  
IC5 Scenedesmus quadricauda: 640 mg/l/7d (anhydrous).  
IC5 Myrocystis aeruginosa: 80 mg/L/8 d.  
Bacterial toxicity:  
EC5 Pseudomonas putida: > 10000 mg/L/16h (anhydrous).  
Daphnia toxicity:  
EC50 Daphnia magna: approx. 120 mg/L/72h (anhydrous).  
Fish toxicity:  
LC50 Leuciscus idus: 440 - 760 mg/L/96h (anhydrous).

### Persistence and degradability

Further details: Biodegradation: > 98 %/2 d (OECD 302 B).  
Product is highly biodegradable.

### Mobility in soil

No data available

### Additional ecological information

Oxygen demand: BOD: 481 mg/g/5d  
COD: 685 mg/g  
ThOD: 685 mg/g  
General information: Do not allow to enter into ground-water, surface water or drains.

## 13. Disposal considerations

### Waste treatment methods

#### Product

Recommendation: Incinerate according to applicable local, state and federal regulations.

#### Contaminated packaging

Recommendation: Dispose of waste according to applicable legislation.  
Non-contaminated packages may be recycled.

## 14. Transport information

### UN number

ADR/RID, IMDG, IATA-DGR:  
not applicable

### Land transport (ADR/RID)

Product designation: Not restricted

### Sea transport (IMDG)

Proper shipping name: Not restricted  
Marine pollutant: no



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### Air transport (IATA)

Proper shipping name: Not restricted

### Further information

No dangerous good in sense of these transport regulations.

## 15. Regulatory information

### Further regulations, limitations and legal requirements

No data available

## 16. Other information

Literature: ICSC 0704

Reason of change: Changes in section 1: Trade name, Material number

Date of first version: 5/10/2013

### Department issuing data sheet

Contact person: see section 1: Dept. responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.