



SAFETY DATA SHEET

in accordance with 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 9/8/2017

Version: 7

Language: en-US

Date of print: 10/12/2017

Steam generator descaling agent & Sensia Arena

Material number 409591040

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1. Product and company identification

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 phone number

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

2. Hazards identification

Emergency overview

Appearance: Form: solid, crystalline
Color: colorless up to white
Odor: odorless
Classification: Eye Irritation - Category 2A;

Hazard symbols:



Signal word: **Warning**
Hazard statements: Causes serious eye irritation.

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.



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Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200) and SIMDUT in Canada.

Hazards not otherwise classified

see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: 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/effects, acute and delayed

Causes serious eye irritation.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range: not applicable
Auto-ignition temperature: No data available
Suitable extinguishing media: Water fog, alcohol resistant foam, carbon dioxide, dry chemical powder.

Specific hazards arising from the chemical

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.

Protective equipment and precautions 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: 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 for clean-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

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

Engineering 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 (PPE)

- Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.
- Skin protection: Wear suitable protective clothing.
Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: nitrile rubber - Layer thickness: 0.11 mm.
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.
- Respiratory protection: With the formation of dust, use a dust mask.
Possible alternatives: Particulates filter P1 according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.



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General hygiene considerations:

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 Color: colorless up to white
Odor:	odorless
Odor threshold:	No data available
pH value:	at 10 g/L: 2.2 at 77 °F, 50 g/L: 1.85
Melting point/freezing point:	275 - 305.6 °F
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
Vapor pressure:	at 68 °F: ≤ 0.1 hPa
Vapor density:	No data available
Density:	at 68 °F: 1.542 g/cm ³
Solubility:	at 77 °F: (Ethanol) 49 g/L
Water solubility:	at 68 °F: approx. 1630 g/L
Partition coefficient: n-octanol/water:	at 68 °F: -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
Explosive properties:	Explosive dust-air mixtures may form.
Ignition temperature:	653 °F
Bulk density:	approx. 800 - 1000 kg/m ³
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.
Conditions to avoid:	Protect from excessive heat. (Release of water of crystalization in case of warming.) Avoid formation of dust/air mixtures because of explosion hazard.
Incompatible materials:	Strong oxidizing agents, reducing agents, metals, bases



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Hazardous decomposition products:

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

Thermal decomposition: > 170°C

11. Toxicological information

Toxicological tests

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 - Category 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

Ecotoxicity

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).

Mobility in soil

No data available

Persistence and degradability

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

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

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

USA: Department of Transportation (DOT)

Proper shipping name: Not restricted

Sea transport (IMDG)

Proper shipping name: Not restricted
Marine pollutant: no

Air transport (IATA)

Proper shipping name: Not restricted



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Further information

No dangerous good in sense of these transport regulations.

15. Regulatory information

National regulations - U.S. Federal Regulations

TSCA Inventory: not listed

TSCA listed: Citric acid anhydrous CAS 77-92-9

National regulations - Great Britain

Hazchem-Code: -

16. Other information

Text for labeling: Contains 100 % Steam generator descaling agent & Sensia Arena. Safety data sheet available on request.

Hazard rating systems: NFPA Hazard Rating:



Health: 1 (Slight)

Fire: 1 (Slight)

Reactivity: 0 (Minimal)

HMIS Version III Rating:

Health: 1 (Slight)

Flammability: 1 (Slight)

Physical Hazard: 0 (Minimal)

Personal Protection: X = Consult your supervisor

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
	X

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.