



SAFETY DATA SHEET

**F-digital deluxe DESCALER, Sensia Arena DESCALER
Sensia Arena care set, SENSIA ARENA DESCALING KIT**

Revision date: 19.12.2022
Version: 11.0
Replaces version: 10.1
UN
Date of print: 2.1.2023
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Material number 409591040

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

Product identifier

Trade name: F-digital deluxe DESCALER, Sensia Arena DESCALER, Sensia Arena care set, SENSIA ARENA DESCALING KIT

This safety data sheet pertains to the following products:
4697700M (Sensia Arena DESCALER 4x80g)
46978000 (Sensia Arena care set 1x80g)
14015000 (F-digital deluxe DESCALER for steam generator 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: DE-58675 Hemer
WWW: www.grohe.com
E-mail: info@grohe.com
Telephone: +49 (0)2372 93-0
Telefax: +49 (0)2372 93-1322

Department responsible for information:
Telephone: +49 (0)2372 93-2037
sustainability@grohe.com

Additional information: Corporate headquarters:
Grohe AG
Feldmühleplatz 15
40545 Düsseldorf
Telephone: +49 (0)211 9130 3000

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.
Specific Target Organ Toxicity (Single Exposure) 3 May cause respiratory irritation.

Label elements



Signal word:

Warning

Hazard statements:

Causes serious eye irritation.
May cause respiratory irritation.



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Precautionary statements:

Keep out of reach of children.

Avoid breathing dust.

Wash hands and face thoroughly after handling.

Use only outdoors or in a well-ventilated area.

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.

Call a POISON CENTER/doctor if you feel unwell.

Store locked up.

Dispose of contents/container to hazardous or special waste collection point.

Other hazards

May form explosible dust-air mixture if dispersed.

3. Composition/information on ingredients

Substances

Chemical characterisation: C₆ H₈ O₇ x H₂O
Citric acid monohydrate

CAS-Number: 5949-29-1

4. First aid measures

In case of inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if problems persist.

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. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult an ophthalmologist.

After swallowing: Never give anything by mouth to an unconscious person. 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. May cause respiratory irritation.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. Firefighting measures

Extinguishing media

Suitable extinguishing media: Water spray jet, alcohol resistant foam, carbon dioxide, extinguishing powder.

Extinguishing media which must not be used for safety reasons:

Full water jet

Special hazards arising from the substance or mixture

Product is combustible.

May form dangerous gases and vapours in case of fire.

Furthermore, there may develop: carbon monoxide and carbon dioxide.



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Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information:

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

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. Change contaminated clothing.

Environmental precautions

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

If necessary notify appropriate authorities.

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. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Change contaminated clothing.

Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.

May form explosible dust-air mixture if dispersed.

Storage

Requirements for storerooms and containers:

Store container tightly closed in a dry area.

Protect against heat /sun rays.

Unsuitable materials: Metal container

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

Control parameters

Occupational exposure limit values:

Type	Limit value
USA: ACGIH: TWA	10 mg/m ³ (Dust limit value, inhalable fraction)
USA: ACGIH: TWA	3 mg/m ³ (Dust limit value, respirable fraction)

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.



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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.

Body protection: Wear suitable protective clothing.

General protection and hygiene measures:
Do not breathe dust. Do not get in eyes, on skin, or on clothing.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Have eye wash bottle or eye rinse ready at work place. Change contaminated clothing.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance: Physical state at 20 °C and 101.3 kPa: solid
Form: crystalline
Colour: colourless up to white

Odour: odourless

Odour threshold: No data available

pH: 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/cm³

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: No data available

Explosive properties: Explosive dust-air mixtures may form.

Ignition temperature: 345 °C

Bulk density: approx. 800 - 1000 kg/m³

Molecular weight: 210,14 g/mol



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10. Stability and reactivity

Reactivity:	May form explosible dust-air mixture if dispersed.
Chemical stability:	Stable under recommended 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 agent, metals, bases
Hazardous decomposition products:	No hazardous decomposition products when regulations for storage and handling are observed.
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) Serious eye damage/irritation: Eye Irritation 2A = Causes serious eye irritation. 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): Specific Target Organ Toxicity (Single Exposure) 3 = May cause respiratory irritation. 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 Mycrocystis aeruginosa: 80 mg/L/8 d.
Bacterial toxicity:
EC5 Pseudomonas putida: > 10.000 mg/L/16h (anhydrous).
Daphnia toxicity:
EC50 Daphnia magna: 1.535 mg/L/24h
Fish toxicity:
LC50 Leuciscus idus: 440 - 760 mg/L/96h (anhydrous).

Persistence and degradability

Further details: Biodegradability: 97 %/28d (OECD 301B)
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 release large quantities into the surface water or into drains.

13. Disposal considerations

Waste treatment methods

Product

Recommendation: Dispose of waste according to applicable legislation.

Package

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

Air transport (IATA)

Proper shipping name: Not restricted

Further information

No dangerous good in sense of these transport regulations.



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15. Regulatory information

Further regulations, limitations and legal requirements

No data available

16. Other information

Text for labelling:

Citric acid monohydrate

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
AS/NZS: Australian Standards/New Zealand Standards
BOD: Biochemical oxygen demand
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
COD: Chemical Oxygen Demand
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EC50: Effective Concentration 50%
EN: European Standard
EQ: Excepted quantities
Eye Irritation: Eye irritation
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LC50: Median lethal concentration
LD50: Lethal dose 50%
log P(o/w): Partition coefficient: octanol/water
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
STOT SE: Specific target organ toxicity - single exposure
ThOD: Theoretical Oxygen Demand
TRGS: Technical Rules for Hazardous Substances
vPvB: Very persistent and very bioaccumulative

Reason of change:

Changes in section 2: Classification, labelling
General revision

Date of first version:

10.5.2013

Department issuing data sheet

Contact person:

see section 1: Department 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.