



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Date of print: 12/2023

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

Material number 409591040

Page: 1 of 8

### 1. Product and company identification

#### 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 phone number

**GIZ-Nord, Göttingen, Germany,**

**Telephone: +49 551-19240**

### 2. Hazards identification

#### Emergency overview

Appearance: Physical state at 68 °F and 101.3 kPa: solid

Form: crystalline

Color: colorless up to white

Odor: odorless

Classification: Eye Irritation - Category 2A. Specific Target Organ Toxicity (Single Exposure) - Category 3.

Hazard symbols:



Signal word:

**Warning**

Hazard statements: Causes serious eye irritation.

May cause respiratory irritation.



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Date of print: 12/2023

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

Material number 409591040

Page: 2 of 8

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.

### Regulatory status

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

### Hazards not otherwise classified

May form explosive dust-air mixture if dispersed.  
see section 11: Toxicological information

## 3. Composition / Information on ingredients

Chemical characterization: C<sub>6</sub> H<sub>8</sub> O<sub>7</sub> x H<sub>2</sub>O  
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/effects, acute and delayed

Causes serious eye irritation. May cause respiratory 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 spray jet, alcohol resistant foam, carbon dioxide, dry chemical powder.  
Extinguishing media which must not be used for safety reasons:  
Full water jet

### Specific hazards arising from the chemical

Product is combustible.  
May form dangerous gases and vapors in case of fire.  
Furthermore, there may develop: carbon monoxide and carbon dioxide.



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Print date: 12/19/2023

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

Material number 409591040

Page: 3 of 8

Protective equipment and precautions 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:

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 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. 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

#### Exposure guidelines

Occupational exposure limit values:

Type	Limit value
USA: ACGIH: TWA	10 mg/m <sup>3</sup> (Dust limit value, inhalable fraction)
USA: ACGIH: TWA	3 mg/m <sup>3</sup> (Dust limit value, respirable fraction)
USA: OSHA: TWA	15 mg/m <sup>3</sup> (Dust limit value, inhalable fraction)
USA: OSHA: TWA	5 mg/m <sup>3</sup> (Dust limit value, respirable fraction)

#### 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.



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Date of print: 12/2023

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

Material number 409591040

Page: 4 of 8

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.

General hygiene considerations: 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 68 °F and 101.3 kPa: solid Form: crystalline Color: colorless up to white
Odor:	odorless
Odor threshold:	No data available
pH:	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: $\leq 0.1$ hPa
Vapor density:	No data available
Density:	at 68 °F: 1.542 g/cm <sup>3</sup>
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:	> 338 °F
Explosive properties:	Explosive dust-air mixtures may form.
Ignition temperature:	653 °F
Bulk density:	approx. 800 - 1000 kg/m <sup>3</sup>
Molecular weight	210.14 g/mol

## 10. Stability and reactivity

Reactivity:	May form explosible dust-air mixture if dispersed.
Chemical stability:	Stable under recommended storage conditions.



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Date of print: 12/2023

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

Material number 409591040

Page: 5 of 8

### 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 crystallization 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:

> 338 °F

## 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)

Serious eye damage/irritation: Eye Irritation - Category 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) - Category 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).



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Date of print: 12/19/2023

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

Material number 409591040

Page: 6 of 8

### 12. Ecological information

#### Ecotoxicity

Aquatic toxicity: Harmful effects by modification of pH-value.  
Algae toxicity:  
IC50 Scenedesmus quadricauda: 640 mg/l/7d (anhydrous).  
IC50 Myrocystis aeruginosa: 80 mg/L/8 d.  
Bacterial toxicity:  
EC50 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).

#### Mobility in soil

No data available

#### Persistence and degradability

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

### 13. Disposal considerations

#### 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

#### 14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: Not restricted

#### Transport hazard class(es)

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

#### Packing group

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

#### Environmental hazards

Marine pollutant: no

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

No data available



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Date of print: 12/2023

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

Material number 409591040

Page: 7 of 8

### 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

### Further information

No dangerous good in sense of these transport regulations.

## 15. Regulatory information

### National regulations - U.S. Federal Regulations

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

TSCA Inventory: not listed

## 16. Other information

Text for labeling:

Contains 100 % F-digital deluxe DESCALER, Sensia Arena DESCALER, Sensia Arena care set, SENSIA ARENA DESCALING KIT. 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

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



# SAFETY DATA SHEET

according to 29 CFR 1910.1200 and ANSI standard Z400.1-2010

Revision date: 12/19/2022

Version: 11.0

Replaces version: 10.1

Language: en-US

Date of print: 12/2023

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

Material number 409591040

Page: 8 of 8

Reason of change: Changes in section 2: Classification, labeling  
General revision

Date of first version: 5/10/2013

### 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.