

Struvite Remover

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

1.1	Product Identifier	
	Product name	Struvite Remover
	Product type	Powder or granulated solid
1.2	Relevant identified uses of the substance or mixture and uses advised against	
	Identified Use(s)	Removal of struvite and limescale from wastewater and digestion systems
	Uses advised against	Anything other than the above. Not for oral consumption or direct contact with food and beverages
1.3	Details of the supplier of the safety data sheet	
	Company Identification	Thrive Sciences Limited 1,67 Fitzjohns Avenue, London, NW3 6PE. UK
	Telephone	+44 (0)1524 481513
	E-mail (competent person)	sales@thrive.eco
1.4	Emergency telephone number	
	Emergency Phone No.	+44 (0)1524 481513 Only available during office hours. Monday to Friday 09.00 – 17.00, GMT
	Languages spoken:	English

Section 2: Hazards identification

2.1	Classification of the substance or mixture	
2.1.1	The retained CLP Regulation Oxidising solid 3; H272 (EU) No 1272/2008, as amended Eye Irrit. 2; H319 for Great Britain	
	Main hazards:	Eye Irritant 2: H319
	Specific Target Organ Toxicity:	Single exposure (Category 3), Respiratory system, H335
2.2	Label elements	

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Hazard Pictogram(s):



Signal words:

WARNING

Hazard statements:

H319: Causes serious eye irritation

H335: May cause respiratory irritation

Precautionary statements:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P264: Wash hands after handling.

P220: Keep/Store away from clothing/combustible materials.

P304+P340+P312: IF INHALED: Remove person to fresh air and keep comfortable. Call a poison centre / doctor if you feel unwell.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P337+P313: If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

None known.

Section 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Substances in preparations / mixtures. According to Regulation (EC) No. 1272/2008 (CLP)

Chemical Identity	CAS No.	w/w %	Hazard Statements	Classification
Citric acid	77-92-9	> 85 %	H319, H335	Eye Irrit. 2; STOT SE 3

Section 4: First aid measures

4.1 Description of first aid measures

Self-protection of the first aider

No action should be taken involving personal risk.
Wear appropriate personal protective

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Inhalation	equipment. Avoid contact with skin and eyes. Avoid breathing dust
Skin contact	IF INHALED: remove to fresh air and keep at rest in a position comfortable for breathing IF exposed or concerned: Get medical advice/attention.
Eye contact	IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water/shower.
Ingestion	IF IN EYES: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
	IF SWALLOWED: immediately make victim drink water (two glasses at most). Consult a physician. Do not induce vomiting.

Section 5: Firefighting measures

5.1	Extinguishing media	
	Suitable extinguishing media	Water Foam Carbon dioxide (CO ₂) Dry powder
	Unsuitable extinguishing media	For this substance/mixture no limitations of extinguishing agents are given.
5.2	Special hazards arising from the substance or mixture	Carbon oxides. Combustible. Risk of dust explosion. Development of hazardous combustion gases or vapours possible in the event of fire
5.3	Advice for firefighters	In the event of fire, wear self-contained breathing apparatus.

Section 6: Accidental release measures

6.1	Personal precautions, protective, equipment and emergency procedures	Advice for non-emergency personnel: Avoid inhalation of dusts, Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
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6.2	Environmental precautions	Avoid release to the environment.
6.3	Methods and material for sweep up spilled substance. Sweep up carefully with non-containment and cleaning up	Cover drains. Collect, Bind, and pump off spills. Transfer to a container for disposal. Recover the product where possible. Take up dry, clean up affected area, avoid generation of dusts.
6.4	Reference to other sections	See also section: 8, 13.

Section 7: Handling and Storage

7.1	Precautions for safe handling	When using do not eat or drink. Wear appropriate personal protective equipment. Avoid contact with skin and eyes. Ensure adequate ventilation. Avoid breathing dust. Wash hands and exposed skin thoroughly after handling. Use non-sparking tools. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid contact with combustible material.
7.2	Conditions for safe storage, including any incompatibilities	Keep the container closed in a dry environment between 10–25°C. Moisture sensitive. Combustible solids.
	Storage temperature	Stable at ambient temperatures. Recommended: < 25 °C to prolong storage life.
	Incompatible materials	Strongly alkaline materials.
7.3	Specific end use(s)	See Section: 1.2.

Section 8: Exposure controls/personal protection

8.1	Control Parameters	
8.1.1	Occupational exposure limits	Not established.
8.1.2	Biological limit value	Not established.
8.1.3	PNECs	PNEC major component: Citric Acid
		Fresh water 0.44 mg/L
		Sea water 0.044 mg/L
		Sewage treatment 1000 mg/L
		Freshwater sediment 34.6 mg/kg
		Sea sediment 3.46 mg/kg
		Soil 33.1 mg/kg

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8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure adequate ventilation. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. A washing facility/water for eye and skin cleaning purposes should be present. / Eyewash bottles should be available.

8.2.2 Individual protection measures, such as personal protective equipment

Keep good industrial hygiene. Wear appropriate personal protective equipment. Avoid contact with skin and eyes. Do not eat, drink, or smoke at the workplace. Wash hands before breaks and after work.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Eye/ face protection

If risk of eye contact cannot be avoided, use eye protection conforming to EN 166.

Skin protection

If prolonged or repeated contact is expected and unavoidable, protective gloves should be worn conforming to EN 374. Suitable materials: PVC, nitrile, rubber, neoprene.

Work appropriate clothing and footwear.

Respiratory protection

Not required for normal conditions of use. If working in a confined space and generation of dusts cannot be avoided, respiratory protection with a particle filter should be used conforming to EN 149: 2001.

8.2.3 Environmental exposure controls

No special measures.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

White powder in 20kg buckets

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Odour	None
Odour Threshold	Not established
pH	Acidic
Melting point	153-159°C
Boiling point	200°C at 1013 hPa
Flash point	No Data available
Evaporation rate	Not applicable – solid
Flammability	No Data available
Upper/lower flammability limits explosive limits	No Data available
Vapour pressure	Not applicable – solid
Vapour density	Not applicable – solid
Relative density	Not established
Solubility	Not established
Partition coefficient: n-octane/water	Not established
Autoignition temperature	Not established
Decomposition temperature	No Data available
Viscosity	Not applicable – solid
Explosive properties	No Data available
Oxidising properties	Not oxidising

Section 10: Stability and reactivity

10.1	Reactivity	The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
10.2	Chemical stability	Stable under normal conditions. Stable under normal conditions.
10.3	Possibility of hazardous reactions	Violent reactions possible with: Metals Oxidizing agents Bases Reducing agents. Hazardous polymerisation will not occur.
10.4	Conditions to avoid	Avoid prolonged storage at elevated temperature.
10.5	Incompatible materials	Avoid contact with alkaline materials.
10.6	Hazardous decomposition products	May give off noxious and toxic fumes in a fire.

Section 11: Toxicological information

11.1	Information on toxicological effects	
	Major Component	Citric acid

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Acute Toxicity

LD50 Oral – Mouse – male and female – 5,400 mg/kg (OECD Test Guideline 401) Inhalation: No data available LD50 Dermal – Rat – male and female – > 2,000 mg/kg (OECD Test Guideline 402)

Skin corrosion/irritation

Skin – Rabbit Result: No skin irritation – 4 h (OECD Test Guideline 404)

Serious eye damage/irritation

Eyes – Rabbit Result: Irritating to eyes. (OECD Test Guideline 405) Remarks: (ECHA)

Respiratory or skin sensitisation

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Germ cell mutagenicity

Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Mutagenicity (mammal cell test): micronucleus. Test system: Human lymphocytes Metabolic activation: without metabolic activation Method: OECD Test Guideline 487 Result: positive Test Type: Chromosome aberration test Species: Rat Cell type: Bone marrow Application Route: Oral Method: OECD Test Guideline 475 Result: negative Test Type: dominant lethal test Species: Rat Application Route: Oral Method: Regulation (EC) No. 440/2008, Annex, B.22 Result: negative

Carcinogenicity

No Data Available

Reproductive toxicity

No Data Available

STOT – single exposure

Inhalation – May cause respiratory irritation.

STOT – repeated exposure

No Data Available

Aspiration hazard

No Data Available

11.2

Other information

None

Section 12: Ecological information

12.1 Toxicity

Toxicity to fish LC50 – Leuciscus idus (Golden orfe) – 440 – 760 mg/l – 96 h Remarks: (IUCLID) Toxicity to algae static test NOEC – Scenedesmus quadricauda (Green algae) – 425 mg/l – 8 h Remarks: (ECHA) (citric acid)

12.2 Persistence and degradability

Biodegradability aerobic – Exposure time 28 d Result: 97 % – Readily biodegradable. (OECD Test Guideline 301B) Biochemical Oxygen Demand (BOD) 526 mg/g Remarks: (IUCLID) Chemical Oxygen Demand (COD) 728 mg/g Remarks: (IUCLID)

12.3 Bioaccumulative potential

Mixture: Based upon the available data, the classification criteria are not met.

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12.4	Mobility in soil	No data for the mixture as a whole
12.5	Results of PBT and vPvB assessment	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6	Other adverse effects	None known.

Section 13: Disposal considerations

13.1	Waste treatment methods	Disposal should be in accordance with local, state, or national legislation. Handle contaminated packages in the same way as the substance itself. Noncontaminated packages may be recycled. Uncleaned empties should be disposed of in the same manner as the contents. Recover or recycle if possible.
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Section 14: Transport information

14.1	UN number	ADR/RID	IMDG	IATA/ICAO
		-	-	-
14.2	UN proper shipping name			
14.3	Transport hazard class			
14.4	Packing group			
14.5	Environmental hazards			
14.6	Special precautions for user	See Section: 2		
14.7	Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable		
14.8	Additional information	None		

Section 15: Regulatory information

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture	
15.1.1	EU regulations	
	Authorisations and/or restrictions on use	Not restricted
	GB Regulations	Not restricted
15.1.2	National regulations	-
	Wassergefährdungsklasse (Germany)	
15.2	Chemical Safety Assessment	A chemical safety assessment is not required under REACH

Section 16: Other information

The following sections contain revisions or new statements: Not applicable – V1.0

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Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830. Compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Legend

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	Chemical Abstracts Service
DNEL	Derived No Effect Level
EC	European Community
ECHA	European Chemicals Agency
EU	European Union
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
AMDG	International Maritime Dangerous Goods
LC50	Lethal concentration at which 50% of the population is killed
LD50	Lethal dose at which 50% of the population is killed
LTEL	Long Term Exposure Limit
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations concerning the international railway transport of dangerous goods
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UN	United Nations
vPvB	very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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Annex to the extended Safety Data Sheet (eSDS)

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Exposure scenarios for substances in this preparation are not available.
