

[In accordance with the criteria of Regulation No 1907/2006 (REACH) as amended]

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

1.1 Product identifier

DS2

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

Relevant identified uses: descaling.

Uses advised against: not determined.

1.3 Details of the supplier of the safety data sheet

Manufacturer: **FADO Sp. z o.o.**

Address: Solna 7a st, 85-862 Bydgoszcz, Poland

Telephone: +48 52 3708835

E-mail address for a competent person responsible for SDS: biuro@theta-doradztwo.pl

1.4 Emergency telephone number

112

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Skin Irrit 2 H315, Skin Sens. 1 H317, Eye Dam. 1 H318, Aquatic Chronic 3 H412

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Harmful to aquatic life with long lasting effects.

2.2 Label elements

Hazard symbols and signal words



Dangerous components placed on the label:

Contains: oxalic acid; dichlorotin.

Hazard statements

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P264 Wash hands thoroughly after handling.

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

P302+P352 IF ON SKIN: Wash with plenty of water and soap.

P301+P312 IF SWALLOWED: Call a POISON CENTER/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.

P310 Immediately call a POISON CENTER/doctor.

P501 Dispose of contents/container to property labeled waste containers in accordance with national legislation.

2.3 Other hazards

Substances contained in the mixture do not meet the criteria for PBT or vPvB.

Section 3: Composition/information on ingredients

3.2 Mixtures

CAS number: 5329-14-6 EC number: 226-218-8 Index number: 016-026-00-0 Registration number: 01-2119488633-28-XXXX	<u>sulphamic acid</u> Skin Irrit. 2 H315, Eye Irrit. 2 H319, Aquatic Chronic 3 H412	> 70 %
CAS number: 144-62-7/ 6153-56-6 EC number: 205-634-3 Index number: 607-006-00-8 Registration number: 01-2119534576-33-XXXX	<u>oxalic acid</u> ¹ Acute Tox. 4 H302, Acute Tox. 4 H312, Eye Dam. 1 H318	< 10 %
CAS number: 10025-69-1 EC number: 600-045-1 Index number: - Registration number: 01-2119971277-28-XXXX	<u>dichlorotin</u> ¹ Met. Corr. 1 H290, Acute Tox. 4 H302, Skin Corr. 1B H314, Skin Sens. 1 H317, Eye Dam. 1 H318, Acute Tox. 4 H332, STOT SE 3 H335, STOT RE 2 H373, Aquatic Chronic 3 H412	< 5 %
CAS number: 95-14-7 EC number: 202-394-1 Index number: - Registration number: 01-2119979079-20-XXXX	<u>1,2,3-benzotriazole</u> Acute Tox. 4 H302, Eye Irrit. 2 H319, Aquatic Chronic 2 H411	< 5 %

¹ Substance with a specific value at the European Union level of the permissible concentration in the work environment.
Full text of each relevant H phrase is given in section 16 of SDS.

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: take off contaminated clothing. Wash out the contaminated skin with plenty of water and soap. Consult a doctor if disturbing symptoms appear.

Eye contact: immediately contact an ophthalmologist. Protect non-irritated eye, remove contact lenses. Wash contaminated eyes thoroughly with water or physiological saline (eg 0.9 % sodium salt chloride or 5 % glucose) for at least 15 minutes. Avoid strong water jet - risk of corneal damage. Put a sterile dressing.

Ingestion: do not induce vomiting. Never give anything to drink to an unconscious person. Wash mouth with water. Consult a physician – show the container or label.

Inhalation: in case of exposure remove to fresh air. Keep warm and calm. Consult a doctor if disturbing symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

Skin contact: causes redness, dryness, allergic reactions, irritation.

Eye contact: redness, tearing, burning, blurred vision, pain, irritation, risk of serious eye damage.

Ingestion: possible stomachache, nausea, vomiting.

Inhalation: may cause irritation of mucous membranes of the eyes and respiratory tract, cough.

4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured. Symptomatic treatment.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: CO₂, dry chemical, water spray, foam. Adapt the extinguishing media to the surrounding materials.

Unsuitable extinguishing media: water jet – risk of the propagation of the flame.

5.2 Special hazards arising from the substance or mixture

During the fire, the product may produce harmful fumes containing carbon oxides, sulfur oxides and other unidentified products of thermal decomposition. Do not inhale combustion products, they can be dangerous for human health.

5.3 Advice for firefighters

The product is not flammable. Personal protection typical in case of fire. Do not stay in the fire zone without self-contained breathing apparatus and protective clothing resistant to chemicals. Remove endangered containers if this can be done safely. In case of fire cool endangered containers with water fog from safe distance. Collect used extinguishing media.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: limit the access for the outsiders into the breakdown area, until the suitable cleaning operations are completed. In the case of large releases, isolate the exposed area. Use personal protective equipment. Avoid eyes and skin contamination. Avoid formation and inhalation of product dusts. Ensure adequate ventilation.

For rescuers: ensure that only personnel trained to remove the malfunction and its effects. Use personal protective equipment.

6.2 Environmental precautions

Do not empty into drains, surface or ground water. In case of release of large amounts of the product, it is necessary to take appropriate steps to prevent it from spreading into the environment. Notify relevant emergency services.

6.3 Methods and material for containment and cleaning up

Pick up mechanically, avoiding dust formation and transfer to appropriate waste disposal containers. Collected material should be treated as waste. Clean the contaminated place with a large amount of water. Ventilate contaminated place.

6.4 Reference to other sections

Use personal protective equipment in accordance with section 8. Dispose in accordance with recommendations from section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good occupational hygiene and safety practices. Do not eat, drink or smoke in the workplace. Before break and after work wash hands carefully. Avoid eyes, skin and clothing contamination. Contaminated clothing should be removed and washed before reuse. Avoid inhalation and formation of product dust. Ensure adequate ventilation of the area in which product is stored and used. Use adequate protective equipment. Keep unused containers tightly sealed. Do not use empty containers for other purposes.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original, properly labeled, tightly closed containers in a cool, dry and well-ventilated area. Do not store with food, drink, animal feedingstuffs and incompatible materials (see subsection 10.5). Avoid direct sunlight. Protect from moisture.

7.3 Specific end use(s)

No data concerning other uses than given in subsection 1.2.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Specification	TWA 8 hour	STEL 15 min
Tin and its inorganic compounds, the inhalable fraction	2 mg/ m ³	—
oxalic acid CAS [144-62-7]	1mg/m ³	—

Legal Basis: Commission Directive 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU.

The table above shows the maximum workplace concentration values at the European Union level.

Please check any national occupational exposure limit values in your country.

Recommended control procedures

Procedures concerning the control over the dangerous components concentrations in the air and control over the air quality in the workplace - if they are available and Justified for the position - in Accordance with the European Standards, with the conditions within the exposure place and a proper test methodology adapted to the working conditions.

DNEL values for components

oxalic acid

subjects	way of operation	effects	type of exposure	value
employees	skin	short-term	local effect	0,69 mg/cm ²
	skin	long-term	systemic effect	2,29 mg/kg body weight
	inhalation	long-term	systemic effect	4,03 mg/m ³
population	skin	short-term	local effect	0,35 mg/cm ²
	skin	long-term	systemic effect	2,14 mg/kg body weight

sulphamic acid

subjects	way of operation	effects	type of exposure	value
employees	skin	long-term	systemic effect	10 mg/kg mc/day
	inhalation	long-term	systemic effect	70,5 mg/m ³
population	skin	long-term	systemic effect	5 mg/kg mc/day
	inhalation	long-term	systemic effect	17,4 mg/m ³
	ingestion	long-term	systemic effect	5 mg/kg mc/day

1,2,3-benzotriazole

badani	droga działania	efekty	rodzaj działania	wartość
employees	skin	long-term	systemic effect	1,08 mg/kg mc/day
	inhalation	long-term	systemic effect	19 mg/m ³
population	skin	long-term	systemic effect	0,54 mg/kg mc/day
	ingestion	long-term	systemic effect	0,54 mg/kg mc/day
	inhalation	long-term	systemic effect	9,55 mg/m ³
	ingestion	short-term	systemic effect	0,54 mg/kg mc/day

PNEC values for components

oxalic acid

fresh water	0,1622 mg/l
marine water	0,01622 mg/l
sewage treatment plant	1550 mg/l

sulphamic acid

fresh water	1,8 mg/l
marine water	0,18 mg/l
water	0,48 mg/l
fresh water sediment	8,36 mg/kg
marine water sediment	0,84 mg/kg
soil	5 mg/kg
sewage treatment plant	20 mg/l

1,2,3-benzotriazole

fresh water	0,0194 mg/l
marine water	0,0194 mg/l
fresh water sediment	0,00375 mg/kg
marine water sediment	0,00375 mg/kg
soil	0,003 mg/kg
sewage treatment plant	39,4 mg/l
occasional release	0,158 mg/l

8.2 Exposure controls

Use the product in accordance with good occupational hygiene and safety practices. Do not eat, drink or smoke. Wash hands thoroughly after breaks and after work. Avoid eyes and skin contamination. Avoid inhalation and formation of product dust. Use personal protective equipment. Provide adequate general ventilation and / or local. Eye showers (washers) should be installed near workplaces.

Hand and body protection

Wear protective gloves resistant to the product. The material on the gloves should be chosen individually at the workplace. In case of short term exposure wear protective gloves with a level of efficacy of 2 or more (breakthrough time > 30 minutes). In case of prolonged contact wear protective gloves with a level of effectiveness of 6 (breakthrough time > 480 minutes).

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.

Eye/face protection

Use adequate protective goggles, if there is a risk of eye contamination.

Respiratory protection

In case of exceeding the exposure limit value, appropriate respiratory protection equipment should be selected considering the concentration of oxygen in the air, the type of airborne contaminants and their physical and chemical properties, location and concentration of harmful substances and gases, operating conditions, load and their duration, temperature and humidity.

The necessity to use and selection of appropriate personal protective equipment should take into account the type of hazard posed by the product, the conditions at the workplace and the manner in which the product is handled. Personal protective equipment must meet requirements of regulation 2016/425 and standards. Employer is obliged to ensure equipment adequate to activities carried out, with quality demands, cleaning and maintenance. Any contaminated or damaged personal protective equipment must be replaced immediately.

Environmental exposure controls

Avoid environment contamination, do not empty into drains. Possible emissions from the ventilation systems and processing equipment should be controlled in order to determinate their compatibility with environmental protection regulations.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

physical state:	solid, powder
colour:	white
odour:	odourless
odour threshold:	not applicable
pH:	not determined
melting point/freezing point:	not determined
initial boiling point and boiling range:	not applicable
flash point:	not applicable
evaporation rate:	not applicable
flammability (solid, gas):	not applicable, product is not flammable
upper/lower flammability or explosive limits:	not applicable
vapour pressure:	not applicable
vapour density:	not applicable
density (20 °C):	not determined
solubility(ies):	not determined
partition coefficient: n-octanol/water:	not determined
auto-ignition temperature:	not applicable, product is not auto-ignition
decomposition temperature:	not determined
explosive properties:	not display
oxidising properties:	not display
viscosity:	not applicable

9.2 Other information

None.

Section 10: Stability and reactivity

10.1 Reactivity

Product is reactive. It does not undergo hazardous polymerization. See also subsections 10.4 - 10.5.

10.2 Chemical stability

The product is stable under normal conditions of storage and use.

10.3 Possibility of hazardous reactions

Hazardous reactions are not known.

10.4 Conditions to avoid

Avoid sources of heat, direct sunlight and overheating. Protect from moisture.

10.5 Incompatible materials

Strong oxidants, bases.

10.6 Hazardous decomposition products

Not known.

Section 11: Toxicological information

11.1 Information on toxicological effects

Toxicity of components

oxalic acid

LD ₅₀ (ingestion, rat)	375 mg/kg
LD ₅₀ (skin, rabbit)	20 mg/kg

sulphamic acid

LD ₅₀ (ingestion, rat)	1 450 mg/kg
LD ₅₀ (skin, rabbit)	> 2 000 mg/kg

1,2,3-benzotriazole

LD ₅₀ (ingestion, rat)	500 mg/kg (OECD 423)
LD ₅₀ (skin, rabbit)	> 1 000 mg/kg
LD ₅₀ (skin, rabbit)	> 2 000 mg/kg

Toxicity of mixture

Acute toxicity

The acute toxicity of the mixture (ATE_{mix}) was calculated on the basis of the appropriate conversion factor contained in Table 3.1.2. Annex I to the CLP Regulation.

ATE _{mix} (ingestion)	> 2 000 mg/kg
ATE _{mix} (skin)	> 2 000 mg/kg
ATE _{mix} (inhalation)	> 5 mg/m ³

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye damage.

Respiratory or skin sensitization

May cause an allergic skin reaction.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Section 12: Ecological information

12.1 Toxicity

Toxicity of components

oxalic acid

Toxicity for fish: LC₅₀ 160 mg/l/96h

Toxicity for daphnia: EC₅₀ 162,2 mg/l/48h (*Daphnia magna*, OECD 202)

Toxicity for algae: 80 mg/l/8dni

Toxicity for terrestrial plants: EC₅₀ 8mM/72h

sulphamic acid

Toxicity for fish: LC₅₀ 70,3 mg/l/96h

Toxicity for daphnia: EC₅₀ 71,6 mg/l/48h (*Daphnia magna*)

Toxicity for algae: ErC₅₀ 48 mg/l/72h

Toxicity for algae: NOEC 18 mg/l/880h

1,2,3-benzotriazole

Toxicity for fish: LC₅₀ LC₅₀ > 100 mg/l/96h (*Brachydanio rerio*)

Toxicity for fish: LC₅₀ LC₅₀ 39,0 mg/l/96h (*Salmo gairdneri*)

Toxicity for daphnia: EC₅₀ 15,8 mg/l/48h (*Daphnia galeata*)

Toxicity for daphnia: EC₅₀ 91-141 mg/l/48h (*Daphnia magna*)

Toxicity for algae: EC₅₀ 102 mg/l/72h (*Scenedesmus subspicatus*)

Toxicity for algae: EC₅₀ 75 mg/l/72h (*Pseudokirchneriella subcapitata*)

Toxicity of mixture

Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Oxalic acid undergoes biological degradation (73 %/ 30 days)

12.3 Bioaccumulative potential

Do not expect bioaccumulation.

oxalic acid log Po/w -1,7

sulphamic acid log Kow -4,3438

12.4 Mobility in soil

Mobility of components of the mixture depends on the hydrophilic and hydrophobic properties and biotic and abiotic conditions of soil, including its structure, climatic conditions, seasons and soil organisms.

12.5 Results of PBT and vPvB assessment

Substances contained in the product are not assessed as PBT or vPvB.

12.6 Other adverse effects

The mixture is not classified as hazardous for the ozone layer. Other harmful effects of particular components of the mixture on the environment (e.g.: endocrine disrupting, the impact on the global warming) should be considered.

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the product: disposal in accordance with the local legislation. Store residues in original containers. If it is possible, recycling is preferred. Waste code should be given in the place of waste formation.

Disposal methods for used packing: reuse/recycle/liquidate empty containers in accordance with the legislation in force. Only containers completely empty can be recycled.

Legal basis: Directive 2008/98/EC as amended, 94/62/EC as amended.

Section 14: Transport information

14.1 UN number

Not applicable, product is not classified as dangerous during transportation.

14.2 UN proper shipping name

Not applicable.

14.3 Transport hazard class(es)

Not applicable.

14.4 Packing group

Not applicable.

14.5 Environmental hazards

Not applicable.

14.6 Special precautions for user

Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance).

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Commission Regulation (EC) No 790/2009 of 10 August 2009 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (Text with EEA relevance).

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives as amended.

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste as amended.

Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC.

Commission Directive 2009/161/EU of 17 December 2009 establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC.

Commission Directive 2017/164/EU of 31 January 2017 establishing a fourth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC, and amending Commission Directives 91/322/EEC, 2000/39/EC and 2009/161/EU.

15.2 Chemical safety assessment

Chemical safety assessment is not required for mixture.

Section 16: Other information

Full text of indicated H phrases mentioned in section 3

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Clarification of aberrations and acronyms

PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	Very Persistent, very Bioaccumulative substance
TWA	Time Weighted Average
STEL	Short Term Exposure Limit
Acute Tox. 4	Acute toxicity cat. 4
Eye Dam. 1	Serious eye damage cat. 1
Eye Irrit. 2	Eye irritation cat. 2
Met. Corr. 1	Corrosive to metals cat. 1
Skin Irrit. 2	Skin irritation cat. 2
Aquatic Chronic 2, 3	Chronic Hazardous to the aquatic environment, cat. 2, 3
Skin. Sens 1	Skin sensitization cat. 1
Skin Corr. 1B	Skin corrosion cat. 1B
STOT SE 3	Specific target organ toxicity — single exposure cat. 3
STOT RE 2	Specific target organ toxicity — repeated exposure cat. 2

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training.

Key literature references and sources of data

This SDS was prepared on the basis of sheets of the individual components, literature data, online databases as well as our knowledge and experience, taking into account current legislation.

Methods of evaluating information which was used for the purpose of classification acc. Regulation (EC) no 1272/2008 as amended

Skin Irrit. 2 H315	calculation method
Skin Sens. 1 H317	calculation method
Eye Dam. 1 H318	calculation method
Aquatic Chronic 3 H412	calculation method

Other data

Version:	3.0/EN
Date of update:	20.12.2018
Changes:	sections: 1-16
Composed by:	mgr Magdalena Skoneczna (on the basis of producer's data).
Safety Data Sheet made by:	„THETA” Technical Consulting

This SDS annuls and replaces all previous versions

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.