

SAFETY DATA SHEET

according to Regulation No. 1907/2006 of the European Parliament and of the Council, as subsequently amended

CLEAMEN 231

Date of revision: 29. 07. 2025

Version: 5.0

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Date of issue: 23. 09. 2021

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

1.1. Product identifier

Product Name

CLEAMEN 231

UFI code

UFI: U921-Q0GH-Q00P-Q3T0

Product code

TC231.R02a.

Mixture description

Water solution.

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

Identified uses

A liquid neutral rinsing and polishing product for dishwashers and glass with automatic dosing.
Consumer and professional use.

Uses advised against

Not known. It is recommended to use it only for the intended use. Other uses may expose users to unpredictable risks.

1.3. Details of the supplier of the safety data sheet

Registered office:

CORMEN s.r.o.

Věchnov 73

593 01

Czech Republic

Tel.: +420 566 550 961

Fax: +420 566 551 822

Trade establishment:

CORMEN s.r.o.

Průmyslová 1420

593 01 Bystřice nad Pernštejnem

Czech Republic

Tel.: +420 565 400 300

e-mail address for a competent person responsible for the SDS: info@cormen.cz

1.4. Emergency telephone number

112 (General emergency phone).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture is classified as **hazardous** according to regulation 1272/2008/EC.

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Classification according to 1272/2008/EC

Met. Corr. 1; H290

Eye Dam. 1; H318

Full text of classifications and H-phrases: see section 16.

The most important adverse physical, human health and environmental effects

May be corrosive to metals. Causes serious eye damage.

2.2. Label elements

Hazard pictograms



Signal word

Danger.

Substances of the mixture to be placed on the label

Contains Undecanol, branched and linear, ethoxylated, propoxylated (≥ 2.5 moles EO/PO), Etidronic acid.

Hazard statements

H290 May be corrosive to metals.

H318 Causes serious eye damage.

Precautionary statements

P102 Keep out of reach of children.

P234 Keep only in original packaging.

P280 Wear eye protection/face protection.

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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. **Dispose of the cleaned packaging without any residual product content in the sorted waste.**

Supplemental hazard information

Mandatory additional information is not required according to CLP regulation.

Composition according to regulation 648/2004/EC on detergents: ≥ 5 - < 15 % non-ionic surfactants, phosphonates.

2.3. Other hazards

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Mixture does not contain substance(s) meeting the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in accordance with Annex XIII of REACH regulation. The mixture and its substances are not mentioned on the Candidate list for possible inclusion in Annex XIV of REACH at the date of the revision of the safety data sheet (established in accordance with Article 59(1) of REACH regulation. Mixture does not contain the substance(s) identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

3.2.1. Substances of a mixture classified as hazardous

Identification of substance		Content wt. %	Classification according to 1272/2008/EC
Undecanol, branched and linear, ethoxylated, propoxylated (≥ 2.5 moles EO/PO)			
CAS Number	not given	5 - < 15	Acute Tox. 4; H302 Eye Dam. 1; H318 ATE _{oral} = 500 mg/kg bw
EC Number	940-634-3		
Index Number	not given		
Registration Number	is not subject to registration, it is a polymer		
Citric acid monohydrate			
CAS Number	5949-29-1	5 - < 15	Eye Irrit. 2; H319 STOT SE 3; H335
EC Number	201-069-1		
Index Number	607-750-00-3		
Registration Number	01-2119457026-42-XXXX		
Etidronic acid			
CAS Number	2809-21-4	1 - < 10	Met. Corr. 1; H290 Acute Tox. 4; H302 Eye Dam. 1; H318 ATE _{oral} = 1 878 mg/kg bw
EC Number	220-552-8		
Index Number	not given		
Registration Number	01-2119510391-53-XXXX		

Full text of classifications and H-phrases: see section 16.

SECTION 4: First aid measures

In all cases keep the victim at physical and mental rest and warm. In case of doubt or if symptoms persist, seek medical attention. Never give anything by mouth if victim is rapidly losing consciousness, unconscious or convulsing. Protect yourself during rescue work.

4.1. Description of first aid measures

Inhalation

Interrupt the exposure, move the person to the fresh air. In case of persistent nausea, seek medical advice.

Skin contact

Remove contaminated clothing, shoes, and wash affected skin thoroughly with water (preferably lukewarm) and soap. Do not use solvents or thinners. If the problem persists, seek medical advice.

Eye contact

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Rinse with a gentle stream of water for at least 15 minutes. Keep your eyelids wide open with your thumb and forefinger. If the affected person is wearing contact lenses, remove them before rinsing eyes if it is easy. Seek medical advice.

Ingestion

Rinse your mouth and then drink plenty of water. Do not induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Are not known.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

The product is non-flammable. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

Solid streams of water may be ineffective.

5.2. Special hazards arising from the substance or mixture

In case of fire extinguishing prevent leakage of water and rest of product into drains. Collect them separately and dispose of safely in accordance with current legislation and applicable local regulations.

In case of fires, hazardous combustion gases are formed: carbon oxides, phosphor oxides and products of incomplete combustion.

5.3. Advice for firefighters

Stop further leakage of product if possible. Spilled product, which does not burn, cover with sand or foam. Move containers and barrels away from the fire to a safe place, if possible. Cool all affected containers down with flooding quantities of water. If the fire can't be extinguished - evacuate the premises.

In case of fire, wear suitable respiratory protective equipment and fire-fighting suit.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes, use suitable protective equipment and clothing, see Section 8. Ensure adequate ventilation. Avoid formation of vapour and aerosol. At the point of leakage, prevent the movement of unauthorized persons.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. If this cannot be avoided, inform the competent authorities (police and firefighters) immediately.

6.3. Methods and material for containment and cleaning up

According to the amount of spilled liquid, drain away the substance (large spillage) or in case of small spillage, absorb it with suitable absorbent (vermiculite, dry sand), put into labelled closed containers and dispose of them accordingly to Section 13. Flush residues with water and collect it for waste disposal. Do not use solvents or dispersants unless instructed by an expert or government authority.

If container is damaged, remove the content to the new undamaged container and label it properly again.

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6.4. Reference to other sections

Refer also to the provisions of sections 7, 8 and 13 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes. Personal protection see Section 8. Ensure good ventilation to prevent formation of vapor and aerosol.

Smoking, eating and drinking should be prohibited at the place of use. Keep safety regulations for handling chemicals. Take off contaminated clothing and protective equipment before entering the dining area. Do not use dirty clothing. After work wash yourself carefully with warm water and soap, take a shower. Use protective cream.

7.2. Conditions for safe storage, including any incompatibilities

Store in original, tightly closed containers, in a dry, cool and well-ventilated place at room temperature. Protect from frost.

Do not store together with incompatible materials (see subsection 10.5), food, drink and feed.

7.3. Specific end use(s)

See subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Exposure limit value

Not determined in EU.

8.1.2. Biological limit values

Not determined in EU.

8.1.3. DNEL and PNEC values

Citric acid monohydrate

ES: 201-069-1

DNEL - not available

PNEC - not available

Etidronic acid

CAS: 2809-21-4

DNEL

Area of use	Route of exposure	Effect	Exposure time	Value
Workers	Inhalation	Systemic effect	Long term	24 mg/m ³
Workers	Dermal	Systemic effect	Long term	34 mg/kg/day
General population	Inhalation	Systemic effect	Long term	12 mg/m ³
General population	Dermal	Systemic effect	Long term	34 mg/kg/day
General population	Oral	Systemic effect	Long term	3.4 mg/kg/day
General population	Oral	Systemic effect	Short term	3.4 mg/kg/day

PNEC

Fresh water

Marine water

Intermittent releases

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		Fresh water	Marine water	Sewage Treatment Plant (STP)
0.675 mg/l	0.068 mg/l	not given	not given	40 mg/l
PNEC				
Sediment (freshwater)	Sediment (marine water)	Air	Soil	Hazard for predators
1 350 mg/kg	135 mg/kg	no effect	4.73 mg/kg	not given
8.2. Exposure controls				
8.2.1. Appropriate engineering controls				
Use only in well-ventilated areas.				
Observe usual safety precautions for working with chemicals. The degree of effectiveness of personal protective equipment depends on temperature and ventilation levels.				
8.2.2. Individual protection measures, such as personal protective equipment				
Do not eat, drink or smoke. After work, wash thoroughly with warm water and soap and take a shower. Use protective cream. Do not soiled protective equipment to wash, do not use solvents.				
Eye/face protection				
Wear safety glasses or face shield (EN 166, EN 149+A1).				
Skin protection - hand protection				
Wear protective gloves (EN 374-1, EN 374-2).				
The selection of the glove material on consideration of the breakthrough time, permeability, degradation and next relevant factors; other chemicals that may come into contact, physical requirements (cut and puncture protection, dexterity, thermal protection), possible body reactions to the glove material and the glove supplier's instructions and specifications. In case of repeated use of gloves, clean and keep them in a well-ventilated place before taking off.				
Skin protection - other				
Suitable protective working clothing and protective footwear.				
Respiratory protection				
Not necessary in case of compliance concentration limits (if they were exceeded, use respiratory protection). In the event of an accident or a fire use self-contained breathing apparatus.				
Thermal hazards				
In normal use is not necessary protective equipment to be worn for materials that represent a thermal hazard.				
8.2.3. Environmental exposure controls				
Uncontrolled release of the mixture into environment is to be avoided. Keep the emission limits according to national legislation.				
SECTION 9: Physical and chemical properties				
9.1. Information on basic physical and chemical properties				
Mixture				
Physical state		Liquid.		
Colour		Colourless.		
Odour		Not determined.		

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Melting point/freezing point	Not determined.
Boiling point or initial boiling point and boiling range	Not determined.
Flammability	Not determined.
Lower explosion limit	Not determined.
Upper explosion limit	Not determined.
Flash point	Not determined.
Auto-ignition temperature	Not determined.
Decomposition temperature	Not determined, the mixture does not contain self-reactive substances or organic peroxides or other substances which may decompose.
pH	1.
Kinematic viscosity	Not determined, the mixture does not contain a substance classified as aspiration toxic, or the sum of the concentrations of substances classified as aspiration toxic is less than 10 wt. %.
Solubility	Fully miscible.
Partition coefficient n-octanol/water (log value)	Does not apply to mixture.
Vapour pressure	Not determined.
Density and/or relative density	1.0707 g/cm ³ .
Relative vapour density	Not determined.
Particle characteristics	Does not apply to liquid.
Citric acid monohydrate ES: 201-069-1	
Physical state	Solid.
Colour	White.
Odour	Odourless.
Melting point/freezing point	ca. 153 °C (literature).
Boiling point or initial boiling point and boiling range	Not determined, substance decomposes.
Flammability	The substance is not classified as flammable (ECSIS Burning Test)
Lower explosion limit	Does not apply to solid.
Upper explosion limit	Does not apply to solid.
Flash point	Does not apply to solid.
Auto-ignition temperature	Does not apply to solid.
Decomposition temperature	Not determined.
pH	Not determined.
Kinematic viscosity	Does not apply to solid.
Solubility	592 g/l (20 °C, literature).
Partition coefficient n-octanol/water (log value)	Not determined.

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Vapour pressure	0 Pa (25 °C, literature).
Density and/or relative density	$D_4^{20} = 1.67$ (literature).
Relative vapour density	Does not apply to solid.
Particle characteristics	Not determined.
Etidronic acid CAS: 2809-21-4	
Physical state	Solid.
Colour	Not determined.
Odour	Not determined.
Melting point/freezing point	≥ 450 °C (EU method A.1).
Boiling point or initial boiling point and boiling range	Not determined.
Flammability	The substance is not classified as flammable (EU method A.10).
Lower explosion limit	Does not apply to solid.
Upper explosion limit	Does not apply to solid.
Flash point	Does not apply to solid.
Auto-ignition temperature	Does not apply to solid.
Decomposition temperature	Not determined, it is not a self-reactive substance or an organic peroxide or a substance that may decompose.
pH	Not determined.
Kinematic viscosity	Does not apply to solid.
Solubility	690 g/l (20 °C, literature).
Partition coefficient n-octanol/water (log value)	$\log Pow = -3.5$ (literature).
Vapour pressure	Not determined, the substance has melting point higher than 300 °C.
Density and/or relative density	1 450 - 1 490 kg/m ³ (literature).
Relative vapour density	Does not apply to solid.
Particle characteristics	Not determined.
9.2. Other information	
9.2.1. Information with regard to physical hazard classes	
Mixture	
Explosives	
Data for the mixture are not available. The mixture does not contain substances classified as explosives or oxidising, or the concentration of substance(s) is lower than the limit for inclusion in Section 3.	
Flammable gases	
It is not gas.	
Aerosols	

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It is not aerosol.

Oxidising gases

It is not gas.

Gases under pressure

It is not gas.

Flammable liquids

Data for the mixture are not available.

The mixture does not contain substances classified as flammable liquids or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Flammable solids

It is not solid.

Self-reactive substances and mixtures

Data for the mixture are not available.

The mixture does not contain substances classified as self-reactive substances or explosives or organic peroxides or oxidising, or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Pyrophoric liquids

Data for the mixture are not available.

The mixture does not contain substances classified as pyrophoric liquids or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Pyrophoric solids

It is not solid.

Self-heating substances and mixtures

Data for the mixture are not available.

The mixture does not contain substances classified as self-heating or pyrophoric substances or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Substances and mixtures, which emit flammable gases in contact with water

Data for the mixture are not available.

The mixture does not contain substances classified as substances, which emit flammable gases in contact with water or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Oxidising liquids

Data for the mixture are not available.

The mixture does not contain substances classified as oxidising liquids or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Oxidising solids

It is not solid.

Organic peroxides

Data for the mixture are not available.

The mixture does not contain substances classified as organic peroxides or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Corrosive to metals

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Data for the mixture are not available.

The mixture is classified as corrosive to metal category 1 based on the etidronic acid content.

Desensitised explosives

Data for the mixture are not available.

The mixture does not contain substances classified as explosives or desensitised explosives, or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Citric acid monohydrate

ES: 201-069-1

Explosives

Data for the substance are not available.

The substance does not contain chemical groups associated with explosive properties.

Flammable gases

It is not gas.

Aerosols

It is not aerosol.

Oxidising gases

It is not gas.

Gases under pressure

It is not gas.

Flammable liquids

It is not liquid.

Flammable solids

The substance is not classified as flammable solid (ECSIS Burning Test).

Self-reactive substances and mixtures

Data for the substance are not available.

The substance does not contain chemical groups associated with explosive or self-reactive properties.

Pyrophoric liquids

It is not liquid.

Pyrophoric solids

Data for the substance are not available.

The substance is stable in air, there is no spontaneous ignition.

Self-heating substances and mixtures

Data for the substance are not available.

The substance is not classified as self-heating.

Substances and mixtures, which emit flammable gases in contact with water

Data for the substance are not available.

The chemical structure of the substance does not contain metals or metalloids.

The substance is soluble in water and forms a stable mixture with it.

Oxidising liquids

It is not liquid.

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Oxidizing solids

Data for the substance are not available.

It is an organic substance that does not contain oxygen, fluorine or chlorine, or these elements are chemically bounded only to carbon or hydrogen.

Organic peroxides

Data for the substance are not available.

The substance does not contain a bivalent group -O-O- with at least one organic radical.

Corrosive to metals

Data for the substance are not available.

The substance is not classified as corrosive to metal.

Desensitised explosives

Data for the substance are not available.

The substance does not contain chemical groups associated with explosive properties.

Etidronic acid

CAS: 2809-21-4

Explosives

Data for the substance are not available.

The substance does not contain chemical groups associated with explosive properties.

Flammable gases

It is not gas.

Aerosols

It is not aerosol.

Oxidising gases

It is not gas.

Gases under pressure

It is not gas.

Flammable liquids

It is not liquid.

Flammable solids

The substance is not classified as flammable, burning time = 2 minutes (EU method A.10).

Self-reactive substances and mixtures

Data for the substance are not available.

The substance is not classified as self-reactive substances.

Pyrophoric liquids

It is not liquid.

Pyrophoric solids

Data for the substance are not available.

The substance is stable in air, there is no spontaneous ignition.

Self-heating substances and mixtures

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Data for the substance are not available.

The substance is not classified as self-heating.

Substances and mixtures, which emit flammable gases in contact with water

Data for the substance are not available.

The chemical structure of the substance does not contain metals or metalloids.

The substance is soluble in water and forms a stable mixture with it.

Oxidising liquids

It is not liquid.

Oxidizing solids

Data for the substance are not available.

It is an organic substance that does not contain oxygen, fluorine or chlorine, or these elements are chemically bounded only to carbon or hydrogen.

Organic peroxides

Data for the substance are not available.

The substance does not contain a bivalent group -O-O- with at least one organic radical.

Corrosive to metals

Data for the substance are not available.

The substance is classified as corrosive to metal.

Desensitised explosives

Data for the substance are not available.

The substance does not contain chemical groups associated with explosive properties.

9.2.2. Other safety characteristics

Mechanical sensitivity	Not determined, it is not an explosive substance.
Self-accelerating polymerisation temperature	Not determined, it is not a polymerising substance.
Formation of explosible dust/air mixtures	Not determined, it is not a dust.
Acid/alkaline reserve	Not determined.
Evaporation rate	Not determined.
Miscibility	Not determined.
Conductivity	Not determined.
Corrosiveness	Not determined.
Gas group	Not determined, it is not gas.
Redox potential	Not determined.
Radical formation potential	Not determined.
Photocatalytic properties	Not determined.

SECTION 10: Stability and reactivity

10.1. Reactivity

The mixture is stable under normal conditions of use. There aren't any hazardous reaction.

10.2. Chemical stability

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Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions aren't known under normal conditions of use.

10.4. Conditions to avoid

Protect from temperatures below 0 °C.

10.5. Incompatible materials

Strong oxidizing agents, strong base.

10.6. Hazardous decomposition products

They do not form under normal use. Burning releases carbon oxides, phosphor oxides and products of incomplete combustion.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Mixture

Acute toxicity

The mixture is not classified as toxic for all routes of exposure.

Oral

Data for the mixture are not available.

The mixture is not classified by the additive formula.

$ATE_{\text{mixture}} > 2\,830 \text{ mg/kg bw}$.

Dermal

Data for the mixture are not available.

The mixture does not contain relevant substances classified as an acute toxicity by dermal route of exposure or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Inhalation

Data for the mixture are not available.

The mixture does not contain relevant substances classified as an acute toxicity by inhalation route of exposure or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Skin corrosion/irritation

Data for the mixture are not available.

The mixture does not contain relevant substances classified as hazardous to skin or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Serious eye damage/irritation

Data for the mixture are not available.

The mixture is classified as causes serious eye damage based on the general/specific concentration limits of substance(s).

Respiratory or skin sensitisation

Data for the mixture are not available.

The mixture does not contain substances classified as sensitizing or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Germ cell mutagenicity

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Data for the mixture are not available.

The mixture does not contain substances classified as mutagenicity or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Carcinogenicity

Data for the mixture are not available.

The mixture does not contain substances classified as carcinogenicity or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Reproductive toxicity

Data for the mixture are not available.

The mixture does not contain substances classified as toxic for reproduction or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

STOT – single exposure

Data for the mixture are not available.

The mixture is not classified as toxic for specific target organs in a single exposure in category 3 according to the recommended concentration limits of substance(s).

STOT – repeated exposure

Data for the mixture are not available.

The mixture does not contain relevant substances classified as toxic for specific target organs in a repeated exposure or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Aspiration hazard

Data for the mixture are not available.

The mixture does not contain substances classified as aspiration hazard or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Other information

See section 2 and 4.

Citric acid monohydrate

ES: 201-069-1

Acute toxicity

Oral Based on available data, the classification criteria are not met.
LD₅₀ = 5 400 mg/kg bw (rat, OECD 401).

Dermal Based on available data, the classification criteria are not met.
LD₅₀ > 2 000 mg/kg bw (rabbit, OECD 402).

Inhalation Data for the substance are not available.

Skin corrosion/irritation

Based on available data, the classification criteria are not met.
Primary dermal irritation index PDII = 0.3 (max. 8) (rabbit, 72 h, OECD 404).

Serious eye damage/irritation

The substance is classified as eye irritant.
Overall irritation score (not fully reversible after 14 days) (rabbit, 72 h, OECD 405).

Respiratory or skin sensitisation

Data for the substance are not available.

Germ cell mutagenicity

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

In vitro:

Positive (OECD 487).

Negative (OECD 471).

In vivo:

Negative (EU Method B.22, OECD 475).

Carcinogenicity

Data for the substance are not available.

Reproductive toxicity

Data for the substance are not available.

STOT – single exposure

Data for the substance are not available.

May cause respiratory irritation.

STOT – repeated exposure

Data for the substance are not available.

Aspiration hazard

The substance is not a hydrocarbon or a chlorinated hydrocarbon with a kinematic viscosity of 20.5 mm²/s or less at 40 °C.

Etidronic acid

CAS: 2809-21-4

Acute toxicity

Oral The substance is classified in category 4.

LD₅₀ = 1 878 mg/kg bw (rat, OECD 401).

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

LD₅₀ > 3 505 mg/kg bw (rabbit, OECD 402).

Inhalation Data for the substance are not available.

Skin corrosion/irritation

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

Mean erythema score = 0 and oedema = 0 (rabbit, 72 hrs., OECD 404).

Serious eye damage/irritation

The substance is classified as seriously damaging to the eyes.

Maximum irritation score = ca. 90 of 110 (irreversible, rabbit, 72 hours, OECD 405).

Respiratory or skin sensitisation

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

Not skin sensitising (guinea pig, maximization test).

Germ cell mutagenicity

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

Negative (OECD 471, OECD 476, OECD 487).

Carcinogenicity

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

NOAEL \geq 493 mg/kg/day (rat, female, oral, OECD 453).

NOAEL \geq 384 mg/kg/day (rat, female, oral, OECD 453).

Reproductive toxicity

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

NOAEL = 92 mg/kg/day (rat, female, oral, generation P0, OECD 416).

NOAEL = 92 mg/kg/day (rat, female, oral, generation F1, OECD 416).

STOT – single exposure

Data for the substance are not available.

STOT – repeated exposure

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

NOAEL = 34 mg/kg/day (juvenile rats, rat, male, oral, 90 d., OECD 408).

LOAEL = 139 mg/kg/day (anemia, rat, male, oral, 90 d., OECD 408).

Aspiration hazard

The substance is not a hydrocarbon or a chlorinated hydrocarbon with a kinematic viscosity of 20.5 mm²/s or less at 40 °C.

11.2. Information on other hazards

Mixture does not contain substance(s) meeting the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in accordance with Annex XIII of REACH regulation. The mixture and its substances are not mentioned on the Candidate list for possible inclusion in Annex XIV of REACH at the date of the revision of the safety data sheet and given in the list (established in accordance with Article 59(1) for having endocrine disrupting properties of REACH regulation.

Mixture does not contain the substance(s) identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605. There is no other relevant information on adverse health effects that is not required according to the classification criteria set out in CLP Regulation.

SECTION 12: Ecological information

12.1. Toxicity

Mixture

Data for the mixture are not available.

Acute aquatic toxicity

The mixture does not contain relevant substances classified as acute aquatic toxicity or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Chronic aquatic toxicity

The mixture does not contain relevant substances classified as a chronic aquatic toxicity or the concentration of substance(s) is lower than the limit for inclusion in Section 3.

Citric acid monohydrate

ES: 201-069-1

The substance is not classified as hazardous for the aquatic environment.

Fish

LC₅₀, 48 hrs., *Leuciscus idus*: 440 - 760 mg/l (mortality, OECD 203)

LC₀, 48 hrs., *Leuciscus idus*: 200 - 620 mg/l (mortality, OECD 203)

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Crustaceans	
LC ₅₀ , 24 hrs., Daphnia Magna: 1 535 mg/l (mortality)	
LC ₀ , 24 hrs., Daphnia Magna: 1 206 mg/l (mortality)	
Algae	
NOEC, 8 d., Scenedesmus quadricauda: 425 mg/l (cell density)	
Etidronic acid	CAS: 2809-21-4
The substance is not classified as hazardous for the aquatic environment.	
Fish	
LC ₅₀ , 96 hrs., Oncorhynchus mykiss: 195 mg/l (mobility, OECD 204).	
NOEC, 14 d., Oncorhynchus mykiss: 60 mg/l (behaviour, loss of equilibrium, OECD 204).	
Crustaceans	
EC ₅₀ , 48 hrs., Daphnia Magna: 527 mg/l (mobility, OECD 202).	
NOEC, 28 d., Daphnia Magna: 60 mg/l (adult survival and number of pups, EPA 66013-75-009).	
Algae	
Data for the substance are not available.	
12.2. Persistence and degradability	
Mixture	
Data for the mixture are not available.	
Citric acid monohydrate	ES: 201-069-1
Readily biodegradable: 100 % after 19 days (removal of dissolved organic carbon, OECD 301 E).	
Etidronic acid	CAS: 2809-21-4
Not readily biodegradable: BOD ₅ /COD = 23 % (OECD 301 D).	
BOD - Biological Oxygen Demand.	
COD - Chemical Oxygen Demand.	
12.3. Bioaccumulative potential	
Mixture	
Data for the mixture are not available.	
Citric acid monohydrate	ES: 201-069-1
Not determined.	
Etidronic acid	CAS: 2809-21-4
BCF < 7 (Cyprinus carpio, dose 0.06 mg/l).	
BCF < 2 (Cyprinus carpio, dose 0.6 mg/l).	
log Pow = -3.5 (literature).	
12.4. Mobility in soil	
Mixture	
Data for the mixture are not available.	
Citric acid monohydrate	ES: 201-069-1

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Not determined.

Etidronic acid

CAS: 2809-21-4

log K_{oc} = 4.22.

12.5. Results of PBT and vPvB assessment

Mixture does not contain substance(s) meeting the criteria for persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) in accordance with Annex XIII of REACH Regulation. The mixture and its substances are not mentioned on the Candidate list for possible inclusion in Annex XIV of REACH at the date of the revision of the safety data sheet (established in accordance with Article 59(1) of REACH Regulation.

12.6. Endocrine disrupting properties

The mixture and its substances are not mentioned on the Candidate list for possible inclusion in Annex XIV of REACH at the date of the revision of the safety data sheet (established in accordance with Article 59(1) of REACH Regulation. Mixture does not contain the substance(s) identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods of the substance or mixture and the contaminated packaging

Dispose according to the applicable European and local regulations (eg. in a hazardous waste incinerator). Do not empty unused product into drainage systems. Do not contaminate ponds or ditches with the product or used container. Hand over the residual amounts and solutions to a licensed disposal company.

Hand over the remaining quantities and unregenerate solutions to an authorized person (specialized company with authorization) or to the collection yard in the hazardous waste section according to the worker's instructions. Empty, cleaned packaging can be stored at a landfill of the appropriate category or **in the sorted waste**.

Possible waste code

20 01 29* - detergents containing hazardous substances (mixture), 15 01 10* - packaging containing residues of or contaminated by hazardous substances (contaminated packaging), 15 01 02 - plastic packaging (clear packaging).

Physical/chemical properties that may affect waste treatment options

Metal corrosion.

Special precautions recommended for waste management

Not known.

Waste legislation

Directive 2008/98/EC on waste and repealing certain Directives, as amended.

SECTION 14: Transport information

14.1. UN number or ID number

UN 3265

14.2. UN proper shipping name

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CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Etidronic acid).

14.3. Transport hazard class(es)

8

14.4. Packing group

III

14.5. Environmental hazards

It is not dangerous for the environment during transport.

14.6. Special precautions for user

Not given.

14.7. Maritime transport in bulk according to IMO instruments

Not available.

14.8. Other information

Labeling according to ADR



Additional data for ADR/RID

Classification code	C3
Labels	8
Hazard identification code	80
Tunnel restriction code	E (ADR), - (RID)
Limited quantities	5 I
Excepted quantities	Maximum net quantity per inner packaging: 30 ml. Maximum net quantity per outer packaging: 1 000 ml.
Transport category	3

Additional data for IMDG

Emergency Schedules (EmS)	F-A, S-B
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SECTION 15: Regulatory information

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

Regulation No. 1907/2006/EC, concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals, as amended (REACH)

Regulation No. 1272/2008/EC, on Classification, Labelling and Packaging of substances and mixtures, as amended (CLP)

Regulation No. 648/2004/EC on detergents, as amended

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15.2. Chemical safety assessment

It has not been carried out for mixture.

SECTION 16: Other information

Reason for the revision of the safety data sheet

Change of the labeling of the mixture. Change in the composition of the mixture in section 3 and related changes in the other sections.

Key or legend to abbreviations and acronyms

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	Substance or mixture corrosive to metals, cat. 1
STOT SE 3	Specific target organ toxicity - single exposure, cat. 3
ATE	Acute Toxicity Estimate
bw	body weight
M	Multiplying factor
ADR	Accord Dangereuses Route
CLP	Regulation No. 1272/2008/EC, on Classification, Labelling and Packaging of substances and mixtures
DNEL	Derived No Effect Level
ICAO/IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
PBT	Persistent, bioaccumulative, toxic substance
PNEC	Predicted No Effect Concentration
REACH	Regulation No. 1907/2006/EC, concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
STOT	Specific target organ toxicity
vPvB	Very persistent and very bioaccumulative substance

Sources of key data used to compile the Safety Data Sheet

European legislation, manufacturer's safety data sheet, registration dossier of substances.

List of H- and P- phrases

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
P102	Keep out of reach of children.

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P234	Keep only in original packaging.
P280	Wear eye protection/face protection.
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 hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Dispose of the cleaned packaging without any residual product content in the sorted waste.

Training advice

According to SDS.

Other information

Classification according to data from the manufacturer. The mixture is classified using calculation methods according to Regulation CLP and tests. Use only for the purposes designated by the manufacturer, will prevent health and environmental risks.

The information in this safety data sheet has been prepared according to the best available knowledge. The safety data sheet has been compiled in good faith but without guarantee. Various factors may influence properties under specific conditions. It is the responsibility of the product user to assess the accuracy of the information for their specific application. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

The safety data sheet is prepared in accordance with Regulation No. 2020/878/EC. There is no additional information in accordance with the local and national legislation of the Member State in the European Union, in the safety data sheet.

The safety data sheet was prepared by LACHEPRA s.r.o.