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

1.1. Product identifier

KALK- und ROSTENTFERNER

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

Use of the substance/mixture

DESCALERS

Uses advised against

No information available.

1.3. Details of the supplier of the safety data sheet

Company name:	Seilflechter-Tauwerk GmbH	
Street:	Auf dem Anger 7-9	
Place:	D-38110 Braunschweig	
Telephone:	+49(0)5307-9611-0	
e-mail:	info@seilflechter.de	
Contact person:	Abteilung Produktsicherheit	Telephone: +49(0)2233 9323 760
Responsible Department:	info@drkeddo.de	

1.4. Emergency telephone number:

+49 (0) 361-730730 (24 h, GIZ Erfurt)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Hazard Statements:
Causes skin irritation.
Causes serious eye irritation.

2.2. Label elements

Regulation (EC) No. 1272/2008

Signal word: Warning

Pictograms:

Hazard statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P280	Wear protective gloves/protective clothing and eye/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents/container to an appropriate recycling or disposal facility.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
7664-38-2	phosphoric acid; orthophosphoric acid ... %			20 - < 25 %
	231-633-2	015-011-00-6	01-2119485924-24	
	Met. Corr. 1, Acute Tox. 4, Skin Corr. 1B, Eye Dam. 1; H290 H302 H314 H318			
77-92-9	Citric acid			3-8 %
	201-069-1		01-2119457026-42	
	Eye Irrit. 2; H319			

Full text of H and EUH statements: see section 16.

Specific concentration limits and M-factors

CAS No	EC No	Chemical name	Quantity
	Specific concentration limits and M-factors		
7664-38-2	231-633-2	phosphoric acid; orthophosphoric acid ... %	20 - < 25 %
	Skin Corr. 1B; H314: >= 25 - 100 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25		

Further Information

No information available.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

No special measures are necessary.

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. Remove contaminated, saturated clothing immediately. Call a physician immediately.

After contact with skin

Wash with plenty of water.

In case of skin irritation, consult a physician.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention.

Do NOT induce vomiting.

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

No information available.

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

First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Dry extinguishing powder. Carbon dioxide (CO2). alcohol resistant foam. Water spray jet

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated:
Carbon monoxide
Nitrogen oxides (NOx)
Phosphorus oxides
The product develops hydrogen in an aqueous solution in contact with metals. (Metal, base)

5.3. Advice for firefighters

Special protective equipment for firefighters Protective clothing.
In case of fire: Wear self-contained breathing apparatus.
Co-ordinate fire-fighting measures to the fire surroundings.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Dispose of waste according to applicable legislation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See protective measures under point 7 and 8.
Personal protection equipment: see section 8
Provide adequate ventilation.
Do not touch or tread spilled product.
Keep away from sources of ignition - No smoking.

6.2. Environmental precautions

Cover drains.
Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.
In case of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Provide fresh air.
Absorb spillage to prevent material damage.
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.
The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

6.4. Reference to other sections

See protective measures under point 7 and 8.
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

See section 8. Wear personal protection equipment (refer to section 8).
Avoid contact with eyes and skin.
Do not breathe gas/vapour/aerosol.
Do not touch or tread spilled product.
Keep container tightly closed.

Clear spills immediately.

Advice on protection against fire and explosion

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

Further information on handling

Observe the usual precautionary measures when handling chemicals.
Don't store containers without labelling.
After use replace the closing cap immediately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a cool, well-ventilated place. Keep/Store only in original container.
Suitable container/equipment material: acid-resistant
To follow: storage temperature <30°C
Unsuitable container/equipment material: metals

Hints on joint storage

Keep away from food, drink and animal feedingstuffs.
Keep away from: alkalines, Acids, Oxidising agent, strong

Further information on storage conditions

Conditions to avoid: Frost, Heat

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
7664-38-2	Orthophosphoric acid	-	1		TWA (8 h)	WEL
		-	2		STEL (15 min)	WEL
57-55-6	Propane-1,2-diol, particulates	-	10		TWA (8 h)	WEL

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
7664-38-2	phosphoric acid; orthophosphoric acid ... %			
Worker DNEL, long-term		inhalation	systemic	10,7 mg/m³
Worker DNEL, long-term		inhalation	local	1 mg/m³
Worker DNEL, acute		inhalation	local	2 mg/m³
Consumer DNEL, long-term		inhalation	systemic	4,57 mg/m³
Consumer DNEL, long-term		inhalation	local	0,36 mg/m³
Consumer DNEL, long-term		oral	systemic	0,1 mg/kg bw/day
57-55-6	Propane-1,2-diol			
Worker DNEL, long-term		inhalation	systemic	168 mg/m³
Worker DNEL, long-term		inhalation	local	10 mg/m³
Consumer DNEL, long-term		inhalation	systemic	50 mg/m³
Consumer DNEL, long-term		inhalation	local	10 mg/m³
77-92-9	Citric acid			
,				

PNEC values

CAS No	Substance	
Environmental compartment		Value
57-55-6	Propane-1,2-diol	
Freshwater		260 mg/l
Freshwater (intermittent releases)		183 mg/l
Marine water		26 mg/l
Freshwater sediment		572 mg/kg
Marine sediment		57,2 mg/kg
Micro-organisms in sewage treatment plants (STP)		20000 mg/l
Soil		50 mg/kg
77-92-9	Citric acid	
Freshwater		0,44 mg/l
Marine water		0,044 mg/l
Freshwater sediment		34,6 mg/kg
Marine sediment		3,46 mg/kg
Micro-organisms in sewage treatment plants (STP)		1000 mg/l
Soil		33,1 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Use only outdoors or in a well-ventilated area.

Protective and hygiene measures

Only wear fitting, comfortable and clean protective clothing.
Avoid contact with skin, eyes and clothes.
Wash hands before breaks and after work.
Take off contaminated clothing and wash it before reuse.
When using do not eat, drink, smoke, sniff.

Make available sufficient washing facilities
Provide eye shower and label its location conspicuously

Eye/face protection

Wear eye/face protection. DIN EN 166
goggles

Hand protection

Tested protective gloves must be worn: EN ISO 374, Acid-resistant
Suitable material: NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber)
The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Wearing with permanent contact
Thickness of the glove material : 0,35 mm (NBR (Nitrile rubber))
Permeation time (maximum wear time) : >= 8 hour(s)

Observe the wear time limits as specified by the manufacturer.
Check leak tightness/impermeability prior to use.

Skin protection

Wear suitable protective clothing. Acid-resistant

Respiratory protection

Usually no personal respirative protection necessary.
Respiratory protection necessary at: exceeding exposure limit values, insufficient ventilation,

Environmental exposure controls

No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	transparent
Odour:	characteristic
pH-Value (at 20 °C):	2,5

Changes in the physical state

Melting point:	not determined
Initial boiling point and boiling range:	~100 °C
Sublimation point:	not determined
Softening point:	not determined
Pour point:	not determined
Flash point:	not applicable

Flammability

Solid:	not applicable
Gas:	not applicable

Explosive properties

not explosive according to EU A.14

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	not applicable

Auto-ignition temperature

Solid:	not applicable

Gas:	not applicable
Decomposition temperature:	not applicable

Oxidizing properties

No information available.

Vapour pressure:	not determined
Vapour pressure:	not determined
Density (at 20 °C):	~1,13 g/cm³
Bulk density:	not determined
Water solubility:	easily soluble

Solubility in other solvents

No information available.

Partition coefficient:	not determined
Viscosity / dynamic:	not determined
Viscosity / kinematic:	not determined
Flow time:	not determined
Vapour density:	not determined
Evaporation rate:	not determined

9.2. Other information

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

The product develops hydrogen in an aqueous solution in contact with metals. (Metal, base)
Exothermic reaction with: Water, alkalines, Acids, Oxidising agent, strong

10.4. Conditions to avoid

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

10.5. Incompatible materials

Metal, base
alkalines
Acids
Oxidising agent, strong

10.6. Hazardous decomposition products

Reference to other sections 10.3: Formation of: Hydrogen
Carbon monoxide, Carbon dioxide (CO2).
Nitrogen oxides (NOx)
Phosphorus oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

There are no data available on the mixture itself.

Acute toxicity

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7664-38-2	phosphoric acid; orthophosphoric acid ... %				
	oral	ATE 500 mg/kg			
77-92-9	Citric acid				
	oral	LD50 5400 mg/kg	Mouse	Study report (1981)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (2006)	OECD Guideline 402

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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.

Specific effects in experiment on an animal

No information available.

Additional information on tests

No information available.

Practical experience

Observations relevant to classification

There are no data available on the preparation/mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

The product has not been tested.

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

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
7664-38-2	phosphoric acid; orthophosphoric acid ... %						
	Acute fish toxicity	LC50	138 mg/l	96 h	Gambusia affinis		
	Acute algae toxicity	ErC50	> 100 mg/l	72 h	Desmodesmus subspicatus	Study report (2010)	EU Method C.3
	Acute crustacea toxicity	EC50	> 100 mg/l	48 h	Daphnia magna	Study report (2010)	OECD Guideline 202
	Acute bacteria toxicity	(> 1000 mg/l)		3 h	activated sludge of a predominantly domestic sewag	Study report (2010)	OECD Guideline 209
77-92-9	Citric acid						
	Acute fish toxicity	LC50	> 100 mg/l	96 h	Pimephales promelas	Photogr. Sci. Eng. 16(5):370-377 (1972)	
	Acute crustacea toxicity	EC50	> 50 mg/l	48 h	other aquatic crustacea: Dreissena polymorpha	Environ.Toxicol.Chem. 16(9): 1930-1934 (	other: ASTM
	Algae toxicity	NOEC	425 mg/l	8 d	Scenedesmus quadricauda	Water Research 14: 231-241 (1980)	other: Bringmann and Kuhn

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No further relevant information available.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
77-92-9	Citric acid	-1,55

BCF

CAS No	Chemical name	BCF	Species	Source
77-92-9	Citric acid	3,2		In: (2009)

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No information available.

Further information

Avoid release to the environment.

The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Dispose of waste according to applicable legislation.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Hazardous waste according to Directive 2008/98/EC (waste framework directive).

List of Wastes Code - residues/unused products

060104 WASTES FROM INORGANIC CHEMICAL PROCESSES; wastes from the manufacture, formulation, supply and use (MFSU) of acids; phosphoric and phosphorous acid; hazardous waste

Contaminated packaging

Recycle sales packaging via DSD (Duales System Deutschland).
Completely emptied packages can be recycled.
Dispose of waste according to applicable legislation.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Marine transport (IMDG)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name:	No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es):	No dangerous good in sense of this transport regulation.
14.4. Packing group:	No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No information available.

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

No information available.

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,3,5,6,7,8,9,10,12,13,15.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID:Règlement international conernat le transport des marchandises dangereuses par chemin de fer
(Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Refulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
CAS: Chemical Abstracts Service (division of the American Chemical Society)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CLP: Regulation on Classification, Labelling and Packaging of Substances and Mixtures,
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
EC50: Effectice concentration, 50 percent
DNEL: Derived No Effect Level
PNEC: Predicted No Effect Concentration
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)