

SAFETY DATA SHEET (EC 1907/2006)**Anti-Kalk**

Version:	3.7 / GB	Material no.	5323511202
Revision date:	21.11.2017	Specification	102851
Issue date:	03.09.2001	VA-Nr	01780196
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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name	Anti-Kalk
REACH Registration No.:	if available listed in Chapter. 3

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

Relevant applications identified	For dental use only.
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1.3. Details of the supplier of the safety data sheet

Company	DeguDent GmbH Postfach 1364 D-63403 Hanau
Telephone	+49 (0)6181/59-5767
Telefax	+49 (0)6181/59-5879
Email address	SDB.Degudent-DE@dentsplysirona.com

1.4. Emergency telephone number

Emergency information	+49 (0)6181/59-50 (This telephone number is available during office hours only.)
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SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Corrosive to metals	Category 1	H290
Skin corrosion/irritation	Category 1B	H314

2.2. Label elements**Labelling as per (EU) 1272/2008**

Statutory basis	EU-CLP as per Regulation (EU) No. 1272/2008, Annex VI
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hazard-defining component(s) (GHS)

- formic acid

Hazard pictograms



Signal word	Danger
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Hazard statement	H290 - May be corrosive to metals. H314 - Causes severe skin burns and eye damage.
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Precautionary statement	P280 - Wear protective gloves/protective clothing/eye protection/face protection. P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P315 - Get immediate medical advice/ attention.
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2.3. Other hazards

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A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

SECTION 3: Composition/information on ingredients

Information on ingredients / Hazardous components as per EU-CLP Regulation (EC) No. 1272/2008

• formic acid		85%	
CAS-No.	64-18-6	EC-No.	200-579-1
Skin corrosion/irritation		Category 1A	H314

Texts of H phrases, see in Chapter 16

SECTION 4: First aid measures

4.1. Description of first aid measures

Observe self-protection
Remove contaminated or saturated clothing immediately and dispose of safely.
Move out of dangerous area.

Inhalation

Move victims into fresh air.
Call a physician immediately.

Skin contact

Wash off immediately with plenty of water.
Obtain medical attention.

Eye contact

With eye held open, thoroughly rinse immediately with plenty of water for at least 10 minutes.
See an eye specialist immediately.
(Cue: caustic burn of the eyes)

Ingestion

Immediately give large quantities of water to drink.
Do NOT induce vomiting.
Notify ambulance immediately (keyword: Formic acid).
Should vomiting occur, be sure to keep victim's head below hips to avoid aspiration of vomitus into the lungs.

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

Symptoms

Shortness of breath

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

Specific therapy/antidote treatment as for acid burn.
If substance has been swallowed:
stomach pumping under gastroscopic view
Continue therapy as with formaldehyde.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Carbon dioxide (CO₂)
quenching powder
Foam

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Suitable extinguishing media: Provide fire extinguisher.

Unsuitable extinguishing media: High volume water jet

5.2. Special hazards arising from the substance or mixture

Product is flammable.

Heavier than air vapour.

Formation of flammable or explosive vapour/air mixtures possible.

5.3. Advice for firefighters

Take precautionary measures against static discharges.

Employ protective equipment commonly used in the event of fire.

In the event of fire, wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not breathe vapours.

Avoid contact with skin, eyes and clothing.

Handle in accordance with good industrial hygiene and safety practice.

6.2. Environmental precautions

Introduction into soil, natural water bodies or sewerage must be prevented.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material, e. g.: diatomaceous earth, sand, universal binder

Rinse away any residue with plenty of water.

Neutralize with: sodium carbonate.

Additional advice

Dispose of contaminated material as a waste in a correct manner.

6.4. Reference to other sections

Wear personal protective equipment; see section 8.

Disposal considerations; see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

vapour may not be inhaled.

Avoid contact with skin and eyes.

Local ventilation.

No eating, drinking, smoking, or snuffing tobacco at work.

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Take precautionary measures against static discharges.

Keep away from sources of ignition - No smoking.

Provide fire extinguisher.

Storage

Beware of pressure build-up when stored in tightly closed containers.

Do not seal containers gas-tight, but keep them closed

Keep in a dry, cool and well-ventilated place.

Protect from the action of light.

Unsuitable materials Zinc, Iron, PVC

German storage class

8A - Flammable caustic hazardous substances

Storage stability

15 - 25 °C

Recommended storage temperature

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**7.3. Specific end use(s)**

Dilute approximately 50mL of the product with 1L water prior to use.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters**

• formic acid			
CAS-No.	64-18-6	EC-No.	200-579-1
Control parameters	5 ppm 9.6 mg/m ³		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	5 ppm 9 mg/m ³ Indicative		Time Weighted Average (TWA):(EU ELV)

8.2. Exposure controls**Engineering measures**

Ensure suitable suction/aeration at the work place and with operational machinery.

Personal protective equipment**Respiratory protection**

If workplace exposure limit is exceeded apply respirator with greyB-type filter.

Hand protection

acid-resistant protective gloves

Glove material Polychloroprene (PCP)

Material thickness 0.5 mm

Break through time 480 min

Method Source: GESTIS substance database (hazardous substance information system of commercial professional associations)

Glove material butyl-rubber

Material thickness 0.5 mm

Break through time 480 min

Method Source: GESTIS substance database (hazardous substance information system of commercial professional associations)

Glove material Fluorinated rubber (FKM)

Material thickness 0.4 mm

Break through time 480 min

Method Source: GESTIS substance database (hazardous substance information system of commercial professional associations)

The suitability for a specific workplace should be discussed with the producers of the protective gloves.,

The exact break through time can be obtained from the protective glove producer and this has to be observed.

Preventive skin protection, Use barrier cream regularly.

Eye/face protection

close-fitting protective goggles (e.g. closed goggles) or face protection

Skin and body protection

Wear protective clothing, acid-proof., Avoid contaminating clothes with product., Take off contaminated clothing and shoes immediately., Apply adequate skin protection agents before handling the product. Assure skin cleaning and skin care after work. Preventive skin protection is recommended.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice., Do not eat, drink, smoke, or sniff while at work. Wash your hands and/or face before breaks and before termination of work.

Protective measures

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

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**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Appearance	
Form	liquid
Colour	pink
Odour	stinging
Odour threshold:	no data available
pH	ca. 2.2 (10 g_l) (20 °C) Medium: Water
Melting point/range	no data available
Boiling point/range	> 100 °C
Flash point	> 65 °C
Evaporation rate	no data available
Flammability (solid, gas)	no data available
Lower explosion limit	15 %(V) formic acid
Upper explosion limit	48 %(V) formic acid
Vapour pressure	28 hPa (20 °C)
Density	ca. 1.23 g/cm3
Miscibility in water	completely miscible
Partition coefficient: n-octanol/water	no data available
Autoinflammability	Not capable of spontaneous combustion or heating.
Thermal decomposition	no data available
Viscosity, dynamic	1.4 mPa.s (20 °C) formic acid
Explosiveness	no data available
Oxidizing properties	no data available
9.2. Other information	
Ignition temperature	> 500 °C
Other information	No further physicochemical data were determined.

SECTION 10: Stability and reactivity

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10.1. Reactivity

Vapours may form explosive mixture with air.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Vigorous to explosive reactions with the substances mentioned below.,
See Sect. 10.5 Incompatible Materials

10.4. Conditions to avoid

No further information available

10.5. Incompatible materials

Nickel-Catalyst, Sodium hypochloride / heat, Hydrogen peroxide, Nitromethane, Furfuryl alcohol/Violent reaction in contact with:, Bases, Oxidizing agents, sulphuric acid, phosphorous pentoxide/Aluminium, Liberation of flammable gases.

10.6. Hazardous decomposition products

Carbon monoxide, hydrogen

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity	LD50 Rat: 1100 mg/kg Test substance: formic acid After swallowing burns in mouth, throat, oesophagus and gastrointestinal tract.
Acute inhalation toxicity	LC50 Rat: 7.4 mg/l / 4 h Test substance: formic acid
Acute dermal toxicity	no data available
Skin irritation	Strong corrosive action on skin and mucous membranes. Test substance: formic acid
Eye irritation	strongly corrosive Test substance: formic acid Risk of serious damage to eyes., Risk of blinding on contact with eyes.
Sensitization	None known.
Repeated dose toxicity	no data available
Mutagenicity assessment	no data available
Carcinogenicity	No data available
Toxicity to reproduction	No data available
Human experience	Causes burns.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish LC50 Leuciscus idus (Golden orfe): 46 - 100 mg/l / 96 h

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Test substance: formic acid

Toxicity in aquatic invertebrates EC50 Daphnia magna (Water flea): 34.2 mg/l / 48 h

Test substance: formic acid

Toxicity to algae IC 50 Desmodesmus subspicatus: 27 mg/l / 72 h

Test substance: formic acid

Toxicity to bacteria EC50 Pseudomonas putida: 47 mg/l / 24 h

Test substance: formic acid

12.2. Persistence and degradability

Biodegradability

Test substance: formic acid
The product is biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation

Accumulation in organisms is not expected due to the coefficient of distribution of n-octanol in water (log Pow).

12.4. Mobility in soil

Mobility

No further information available

12.5. Results of PBT and vPvB assessment

A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

12.6. Other adverse effects

Further Information

Still forms corrosive mixtures with water even when diluted.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product

Disposal according to local authority regulations.

Uncleaned packaging

Disposal according to local authority regulations.

SECTION 14: Transport information

Transport on land (ADR/RID/GGVSEB)

14.1. UN number: UN 3412
14.2. UN proper shipping name: FORMIC ACID(solution)
14.3. Transport hazard class(es): 8
14.4. Packing group: II
14.5. Environmental hazards: --
14.6. Special precautions for user: Yes

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ADR: Tunnel Restriction Code: (E)

Inland waterway transport (ADN/GGVSEB (Germany))

14.1. UN number:	UN 3412
14.2. UN proper shipping name:	FORMIC ACID(solution)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
14.5. Environmental hazards:	--
14.6. Special precautions for user:	No

Air transport ICAO-TI/IATA-DGR

14.1. UN number:	UN 3412
14.2. UN proper shipping name:	Formic acid(solution)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
14.5. Environmental hazards:	--
14.6. Special precautions for user:	Yes

IATA-C: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!

IATA-P: FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!

Sea transport IMDG-Code/GGVSee (Germany)

14.1. UN number:	UN 3412
14.2. UN proper shipping name:	FORMIC ACID(solution)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
14.5. Environmental hazards:	--
14.6. Special precautions for user:	Yes

EmS: F-A,S-B

Clear of living quarters., FOR USA ONLY: When shipping in, by or via USA note of the Reportable Quantity-Regulation!

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
for transportapproval see regulatory information

SECTION 15: Regulatory information

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

National legislation

employment restriction The employment limitations under the protection of young persons act, the laws on pregnant women and young mothers and work at home is/are to be observed.

15.2. Chemical safety assessment

Chemical safety assessment No Chemical Safety Report as per Articles 2(8), 2(9) or 14 of the REACH Regulation is required for this product.

SECTION 16: Other information

Relevant H phrases from chapter 3

H314 : Causes severe skin burns and eye damage.

Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Legend

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BetrSichV	German Ordinance on Industrial Safety and Health
c.c.	closed cup
CAS	Chemical Abstract Services
CESIO	European Committee of Organic Surfactants and their Intermediates
ChemG	German Chemicals Act
CMR	carcinogenic-mutagenic-toxic for reproduction
DIN	German Institute for Standardization
DMEL	Derived minimum effect level
DNEL	Derived no effect level
EINECS	European Inventory of Existing Commercial Chemical Substances
EC50	half maximal effective concentration
GefStoffV	German Ordinance on Hazardous Substances
GGVSEB	German ordinance for road, rail and inland waterway transportation of dangerous goods
GGVSee	German ordinance for sea transportation of dangerous goods
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
ISO	International Organization For Standardization
LOAEL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
REACH	REACH registration
RID	Convention concerning International Carriage by Rail
STOT	Specific Target Organ Toxicity
SVHC	Substances of Very High Concern
TA	Technical Instructions
TPR	Third Party Representative (Art. 4)
TRGS	Technical Rules for Hazardous Substances
VCI	German chemical industry association

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vPvB	very persistent, very bioaccumulative
VOC	volatile organic compounds
VwVwS	German Administrative Regulation on the Classification of Substances Hazardous to Waters into Water Hazard Classes
WGK	Water Hazard Class
WHO	World Health Organization