

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 10/26/2017

Reviewed on 10/26/2017

### 1 Identification

- **Product identifier**

- Trade name: **Dentacid**
- Article number: 3010-0433
- Application of the substance / the mixture Grinding auxiliary product

- **Details of the supplier of the safety data sheet**

- Manufacturer/Supplier: Supplier:  
SIRONA Dental Systems GmbH  
Fabrikstraße 31  
D-64625 Bensheim  
http://www.sirona.de  
Telefon:+49(0)6251/16-1670  
Telefax:+49(0)6251/16-1818

Manufacturer:  
Graichen Produktions-und Vertriebs-GmbH  
Darmstädterstraße 127-129  
D-64625 Bensheim  
Germany  
Tel.: +49 6251 73103  
Fax: +49 6251 77901  
E-Mail: ehs@graichen-bensheim.de  
www.graichen.net

- Information department: Environment protection department
- Emergency telephone number: Advice centre for poisoning university Mainz phone +49(0)6131/19240  
or poison information:+49(0)700/GIFTINFO

### 2 Hazard(s) identification

- **Classification of the substance or mixture**

- Flam. Liq. 4 H227 Combustible liquid.
- Acute Tox. 4 H302 Harmful if swallowed.
- Acute Tox. 3 H331 Toxic if inhaled.
- Skin Corr. 1B H314 Causes severe skin burns and eye damage.
- Eye Dam. 1 H318 Causes serious eye damage.

- **Label elements**

- GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

- Hazard pictograms



GHS05 GHS06

- Signal word

Danger

- Hazard-determining components of labeling:

Ameisensäure (Formic acid)  
ethanediol  
Combustible liquid.  
Harmful if swallowed.  
Toxic if inhaled.

- Hazard statements

Causes severe skin burns and eye damage.

- Precautionary statements

Keep away from flames and hot surfaces. – No smoking.

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

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

If swallowed: Call a poison center/doctor if you feel unwell.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a poison center/doctor.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- NFPA ratings (scale 0 - 4)



Health = 3

Fire = 2

Reactivity = 0

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· HMIS-ratings (scale 0 - 4)

HEALTH	3	Health = *3
FIRE	2	Fire = 2
REACTIVITY	0	Reactivity = 0

(Contd. of page 1)

**Other hazards**

- Results of PBT and vPvB assessment
- PBT:
- vPvB:

Not applicable.  
Not applicable.

**3 Composition/information on ingredients****Chemical characterization: Mixtures**

· Dangerous components:

	Ameisensäure (Formic acid) ⚠ Flam. Liq. 3, H226; ⚠ Acute Tox. 3, H331; ⚠ Skin Corr. 1B, H314; ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4 H302	50-100%
107-21-1	ethanediol ⚠ Acute Tox. 4, H302	<2.5%

· Additional information:

For the wording of the listed hazard phrases refer to section 16.

**4 First-aid measures****Description of first aid measures**

· General information:

Take affected persons out of danger area and lay down.  
Immediately remove any clothing soiled by the product.  
Remove breathing apparatus only after contaminated clothing have been completely removed.

· After inhalation:

In case of irregular breathing or respiratory arrest provide artificial respiration.  
In case of unconsciousness place patient stably in side position for transportation.  
Supply fresh air or oxygen; call for doctor.

· After skin contact:

Supply fresh air; consult doctor in case of complaints.  
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

· After eye contact:

Immediately wash with water and soap and rinse thoroughly.

· After swallowing:

Rinse opened eye for several minutes under running water. Then consult a doctor.  
Immediately call a doctor.

· Information for doctor:

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

- Most important symptoms and effects, both acute and delayed

Breathing difficulty  
Cramp

· Danger

Danger of circulatory collapse.

- Indication of any immediate medical attention and special treatment needed

No further relevant information available.

**5 Fire-fighting measures****Extinguishing media**

· Suitable extinguishing agents:

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture**

Carbon monoxide (CO)

**Advice for firefighters**

· Protective equipment:

Wear self-contained respiratory protective device.  
Mouth respiratory protective device.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

**Environmental precautions:**

Dilute with plenty of water.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling:**

· Precautions for safe handling

Avoid splashes or spray in enclosed areas.

When diluting, always stir the product into standing water, not water to product.

Open and handle receptacle with care.

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- Information about protection against explosions and fires: Fumes can combine with air to form an explosive mixture. Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- Storage: Store only in the original receptacle.
- Requirements to be met by storerooms and receptacles: Store away from foodstuffs. Store away from oxidizing agents.
- Information about storage in one common storage facility: Protect from heat and direct sunlight. Store receptacle in a well ventilated area.
- Further information about storage conditions: No further relevant information available.
- **Specific end use(s)**

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- Components with limit values that require monitoring at the workplace: 64-18-6 Ameisensäure  
MAK 9,5 mg/m<sup>3</sup>, 5 ml/m<sup>3</sup>  
MAK(TRGS 900) 9,5 mg/m<sup>3</sup>, 5 ml/m<sup>3</sup>  
Y; DGF, EU  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the remaining constituent has no known exposure limits.

**107-21-1 ethanediol**

TLV	Short-term value: 10** mg/m <sup>3</sup> , 50* ppm Long-term value: 25* ppm *vapor fraction:**inh. fraction, aerosol only
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- Additional information: The lists that were valid during the creation were used as basis.
- **Exposure controls**
- Personal protective equipment: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the eyes. Avoid contact with the eyes and skin.
- General protective and hygienic measures: Short term filter device: Acid resistant gloves Protective gloves The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Breathing equipment: Butyl rubber, BR
- Protection of hands: Neoprene gloves Fluorocarbon rubber (Viton) The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- Material of gloves: Value for the permeation: Level ≤ 0,7 mm 480min (8h) EN374 The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Penetration time of glove material: Tightly sealed goggles Protective work clothing
- Eye protection:
- Body protection:

**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
- General Information
- Appearance:
 

Form:	Fluid
Color:	Red

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- Odor: Acrid
- Odor threshold: Not determined.
- pH-value at 20 °C (68 °F): 1,6
- Change in condition
  - Melting point/Melting range: - 25 °C (-13 °F)
  - Boiling point/Boiling range: 100 °C (212 °F)
- Flash point: 71 °C (159.8 °F)
- Flammability (solid, gaseous): Not applicable.
- Ignition temperature: 500 °C (932 °F)
- Decomposition temperature: Not determined.
- Auto igniting: Product is not selfigniting.
- Danger of explosion: Not determined.
- Explosion limits:
  - Lower: 15,0 Vol %
  - Upper: 47,0 Vol %
- Vapor pressure at 20 °C (68 °F): 28 hPa (21 mm Hg)
- Density at 20 °C (68 °F): 1,15 g/cm<sup>3</sup> (9.5968 lbs/gal)
- Relative density: Not determined.
- Vapor density: Not determined.
- Evaporation rate: Not determined.
- Solubility in / Miscibility with
  - Water: Fully miscible.
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - Dynamic: Not determined.
- Solvent content:
  - Organic solvents: 0,0 %
  - Water: 22,3 %
- Solids content: 2,5 %
- **Other information**: No further relevant information available.

**10 Stability and reactivity**

- **Reactivity**: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**: Violent reaction with air and oxidizing agents.  
Forms explosive gas mixture with air.  
Reacts with alkali (lyes).  
Reacts with amines.  
Reacts with peroxides.  
Reacts with catalysts.
- **Conditions to avoid**: No further relevant information available.
- **Incompatible materials**: No further relevant information available.
- **Hazardous decomposition products**: Carbon monoxide and carbon dioxide

**11 Toxicological information**

- **Information on toxicological effects**
- Acute toxicity:

- LD/LC50 values that are relevant for classification:

**Ameisensäure (Formic acid)**

Oral	LD50	1,200 mg/kg (rat)
Inhalative	LC50/4h	7.4 mg/l (rat)

**107-21-1 ethanediol**

Oral	LD50	5,840 mg/kg (rat)
Dermal	LD50	9,530 mg/kg (rabbit)

- Primary irritant effect:
  - on the skin: Strong caustic effect on skin and mucous membranes.
  - on the eye: Strong caustic effect.  
Strong irritant with the danger of severe eye injury.
- Sensitization: No sensitizing effects known.
- Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations:  
Toxic  
Harmful

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Corrosive  
Irritant  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

- Carcinogenic categories

- IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

- NTP (National Toxicology Program)

None of the ingredients is listed.

- OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

### 12 Ecological information

- **Toxicity**

- 107-21-1 ethanediol

Bacteria ISO 8192 | 1,995 mg/l (Bacteria)

- Aquatic toxicity:

- 107-21-1 ethanediol

EC50 (48h)	>100 mg/l (daphnia magna/gr. Wasserfloh)
EC50 (96h)	6,500 mg/l (Desmodesmus subspicatus/Grünalge)
LC50 (96h)	72,860 mg/l (Fish)
NOEC	8,590 mg/l / 7d (daphnia magna/gr. Wasserfloh)
NOEC (Fish)	15,380 mg/l / 7d (Fish)

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- Bioaccumulative potential No further relevant information available.
  - Mobility in soil No further relevant information available.

- **Additional ecological information:**

- General notes: Must not reach bodies of water or drainage ditch undiluted or unneutralized. Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous. Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**

- PBT: Not applicable.
  - vPvB: Not applicable.
  - **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Uncleaned packagings:**

- Recommendation: Non contaminated packagings can be treated like household garbage.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**

- DOT, ADR, IMDG, IATA

UN3412

- **UN proper shipping name**

- DOT

Formic acid

- ADR

3412 Formic acid

- IMDG, IATA

FORMIC ACID

- **Transport hazard class(es)**

- DOT



- Class

8 Corrosive substances

- Label

8

- ADR



- Class

8 (CT1) Corrosive substances

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<ul style="list-style-type: none"> <li>· Label</li> </ul>	8
<hr style="border-top: 1px dashed black;"/>	
<ul style="list-style-type: none"> <li>· IMDG, IATA</li> </ul>	
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> <li>· <b>Packing group</b></li> <li>· DOT, ADR, IMDG, IATA</li> <li>· <b>Environmental hazards:</b></li> <li>· Marine pollutant:</li> <li>· <b>Special precautions for user</b></li> <li>· Danger code (Kemler):</li> <li>· EMS Number:</li> <li>· Segregation groups</li> <li>· Stowage Category</li> <li>· Stowage Code</li> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> <li>· <b>Transport/Additional information:</b></li> </ul>	<ul style="list-style-type: none"> <li>8 Corrosive substances</li> <li>8</li> <li>II</li> <li>No</li> <li>Warning: Corrosive substances</li> <li>86</li> <li>F-A,S-B</li> <li>Acids, acids</li> <li>A</li> <li>SW2 Clear of living quarters.</li> <li>Not applicable.</li> </ul>
<hr style="border-top: 1px dashed black;"/>	
<ul style="list-style-type: none"> <li>· ADR</li> <li>· Excepted quantities (EQ)</li> </ul>	<ul style="list-style-type: none"> <li>Code: E2</li> <li>Maximum net quantity per inner packaging: 30 ml</li> <li>Maximum net quantity per outer packaging: 500 ml</li> </ul>
<hr style="border-top: 1px dashed black;"/>	
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	<ul style="list-style-type: none"> <li>1L</li> <li>Code: E2</li> <li>Maximum net quantity per inner packaging: 30 ml</li> <li>Maximum net quantity per outer packaging: 500 ml</li> <li>UN 3412 FORMIC ACID, 8, II</li> </ul>
<ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>	

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- Sara

· Section 355 (extremely hazardous substances):
None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):
64-18-6   Formic acid

· TSCA (Toxic Substances Control Act):
64-18-6   Formic acid

· Proposition 65
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· Chemicals known to cause cancer:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

· Carcinogenic categories
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· EPA (Environmental Protection Agency)
None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)
None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)
None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

· GHS label elements
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· Hazard pictograms
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· Signal word
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The product is classified and labeled according to the Globally Harmonized System (GHS).



GHS05 GHS06

Danger

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<ul style="list-style-type: none"> <li>· Hazard-determining components of labeling:</li> <li>· Hazard statements</li> <li>· Precautionary statements</li> </ul>	<p>Ameisensäure (Formic acid) ethanediol Combustible liquid. Harmful if swallowed. Toxic if inhaled. Causes severe skin burns and eye damage. Keep away from flames and hot surfaces. – No smoking. Do not breathe dusts or mists. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Call a poison center/doctor if you feel unwell. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see on this label). Wash contaminated clothing before reuse. In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.</p>
<ul style="list-style-type: none"> <li>· <b>Chemical safety assessment:</b></li> </ul>	<p>A Chemical Safety Assessment has not been carried out.</p>

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

<ul style="list-style-type: none"> <li>· <b>Department issuing SDS:</b></li> <li>· Date of preparation / last revision</li> <li>· Abbreviations and acronyms:</li> </ul>	<p>Environment protection department. 10/26/2017 / 1800 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association ACGIH: American Conference of Governmental Industrial Hygienists EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMS: Hazardous Materials Identification System (USA) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety &amp; Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Flam. Liq. 3: Flammable liquids – Category 3 Flam. Liq. 4: Flammable liquids – Category 4 Acute Tox. 4: Acute toxicity – Category 4 Acute Tox. 3: Acute toxicity – Category 3 Skin Corr. 1B: Skin corrosion/irritation – Category 1B Eye Dam. 1: Serious eye damage/eye irritation – Category 1</p>
<ul style="list-style-type: none"> <li>· * Data compared to the previous version altered.</li> </ul>	

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