This SDS packet was issued with item:
076366223

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

076366025
1 Identification of the substance/mixture and of the company/undertaking

- **Trade name**: Dentatec
- **Application of the substance / the preparation**: Milling additive
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier**: SIRONA Dental Systems GmbH
    - Fabrikstraße 31
    - 64625 Bensheim
    - http://www.sirona.de
    - Telefon: +49(0)6251/16-3440
    - Telefax: +49(0)6251/16-2935
  - **Manufacturer**: Graichen Produktions-und Vertriebs-GmbH
    - Darmstädterstraße 127-129
    - D-64625 Bensheim

- **Informing 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 Hazards identification

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
  - Xi; Irritant
  - R36/38: Irritating to eyes and skin.
  - Xi; Sensitising
  - R43: May cause sensitisation by skin contact.

- **Classification system**: The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- **Labelling according to EU guidelines**: The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

- **Code letter and hazard designation of product**: Xi Irritant

- **Hazard-determining components of labelling**: mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-1isothiazol-3-one [EC no. 220-239-6] (3:1)

- **Risk phrases**: 36/38 Irritating to eyes and skin.

- **Safety phrases**: 24/25 Avoid contact with skin and eyes.
  - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - 36/37 Wear suitable protective clothing and gloves.
  - 46 If swallowed, seek medical advice immediately and show this container or label.
  - 64 If swallowed, rinse mouth with water (only if the person is conscious).

2.3 Other hazards

- **Results of PBT and vPoB assessment**: Not applicable.

(Contd. on page 2)
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name Dentatec

. vPvB: Not applicable.

* 3 Composition/information on ingredients

. 3.2 Chemical characterization: Mixtures
. Description: Milling additive
. Dangerous components:
   CAS: 52-51-7 bronopol (INN) < 2.5%
   EINECS: 200-143-0 Xn R21/22; Xi R37/38-41; N R50
   CAS: 55965-84-9 mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) < 2.5%
   T R23/24/25; C R34; Xi R43; N R50/53

* 4 First aid measures

. 4.1 Description of first aid measures
. General information: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident. Position and transport in a stable posture on side.
   . After inhalation: Supply fresh air; consult doctor in case of symptoms.
   . After skin contact: If skin irritation continues, consult a doctor. Instantly wash with water and soap and rinse thoroughly.
   . After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
   . After swallowing: Rinse out mouth and then drink plenty of water. Instantly call for doctor.
. 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.
. 4.3 Indication of any immediate medical attention and special treatment needed No further relevant information available.

* 5 Firefighting measures

. 5.1 Extinguishing media
. Suitable extinguishing agents: CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
. For safety reasons unsuitable extinguishing agents Water with a full water jet.
. 5.2 Special hazards arising from the substance or mixture
   Formation of toxic gases is possible during heating or in case of fire.
   Sulphur dioxide (SO2)
   Hydrogen chloride (HCl)
   Nitrogen oxides (NOx)
   Carbon monoxide (CO)
   Carbon dioxide (CO2)
   Hydrogen bromide (HBr)
. 5.3 Advice for firefighters
. Protective equipment: Wear self-contained breathing apparatus.

* 6 Accidental release measures

. 6.1 Personal precautions, protective equipment and emergency procedures
. Use breathing protection against the effects of fumes/dust/aerosol.
. Do not allow to enter drainage system, surface or ground water.
. 6.2 Environmental precautions:
. 6.3 Methods and material for containment and cleaning up:
   Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Ensure adequate ventilation. (Contd. on page 3)
7 Handling and storage

7.1 Precautions for safe handling
No special precautions necessary if used correctly.

7.2 Conditions for safe storage, including any incompatibilities

Information about storage in one single storage facility:
Store away from food.

7.3 Specific end use(s)
Milling additive

8 Exposure controls/personal protection

8.1 Control parameters
Components with critical values that require monitoring at the workplace:
56-81-5 glycerol
WEL Long-term value: 10 mg/m³

CAS No. Designation of material % Type Value Unit
Additional Occupational Exposure Limit Values for possible hazards during processing:
Country Components Categorie mg/m³
Germany 2-methyl-4-isothazolin-3-on MAK 0,05
5-chloro-2-methyl-4-isothazolin-3-on MAK 0,05

Additional information:
The lists that were valid during the compilation were used as basis.

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.

Breathing equipment:
Not required.

Protection of hands:
Protective gloves.

Material of gloves
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0,7 mm

Penetration time of glove material
Value for the permeation: Level ≥ 0,7 mm 480 min (8h)EN 374
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.

Not suitable are gloves made of the following materials:
Natural rubber, NR
PVA gloves

Eye protection:
Tightly sealed safety glasses.

(Contd. on page 4)
9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance: Fluid

Form: Fluid

Colour: Colourless

Smell: Characteristic

Odour threshold: Not determined.

pH-value at 20°C: > 4

Change in condition

Melting point/Melting range: Not determined

Boiling point/Boiling range: 100°C

Flash point: 101°C

Inflammability (solid, gaseous) Not applicable.

Ignition temperature: 400°C

Decomposition temperature: Not determined.

Self-inflammability: Product is not selfigniting.

Danger of explosion: Not determined.

Critical values for explosion:

Lower: Not determined.

Upper: Not determined.

Steam pressure at 20°C: 0.1 hPa

Density at 20°C: 1.23238 g/cm³

Relative density: Not determined.

Vapour density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with Water: Fully miscible

Segregation coefficient (n-octanol/water): Not determined.

Viscosity:

dynamic: Not determined.

kinematic: Not determined.

9.2 Other information

No further relevant information available.

10 Stability and reactivity

10.1 Reactivity

No decomposition if used according to specifications.

10.2 Chemical stability

Forms explosive gas mixture with air

Reacts with strong oxidizing agents

No further relevant information available.

10.3 Possibility of hazardous reactions

10.4 Conditions to avoid

10.5 Incompatible materials:

10.6 Hazardous decomposition products:

Hydrogen chloride (HCl)

Nitrous vitriol gases

Sulphur dioxide

(Contd. on page 5)
11 Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

Toxicological information (External MSDS)
2-Brom-2-nitropropan-1,3-diol: Acute toxicity, oral: 254 mg/kg rat.
Acute toxicity, dermal: >1600 mg/kg
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H
-isothiazol-3-one [EC no. 220-239-6] (3:1):
Acute toxicity, oral: 457 mg/kg rat.
Acute toxicity, dermal: >2000 mg/kg rat.
Acute toxicity, dermal: 660 mg/kg rabbit.

Primary irritant effect:

on the skin: Irritant for skin and mucous membranes.

on the eye: irritant

Sensitization: Sensitization possible by skin contact.

Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version: Irritant

12 Ecological information

12.1 Toxicity

Aquatic toxicity:

2-Brom-2-nitropropan-1,3-diol
Aquatic toxicity LC50: 96h: 41.2 mg/l Oncorhynchus mykiss
LC50: 96h: 35.7 mg/l Lepomis macrochirus
EC50: 48h: 1.4 mg/l Daphnia magna
EC50: 72h: 0.4 mg/l Pseudokirchneriella subcapitata
EC50: 16h: >50 mg/l Pseudomonas putida
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H
-isothiazol-3-one [EC no. 220-239-6] (3:1)
Aquatic toxicity LC50: 96h: 0.19 mg/l Oncorhynchus mykiss
LC50: 96h: 0.28 mg/l Lepomis macrochirus
EC50: 48h: 0.16 mg/l Daphnia magna
EC50: 72h: 0.018 mg/l Pseudokirchneriella subcapitata
EC50: 16h: 5.7 mg/l Pseudomonas putida

12.2 Persistence and degradability No further relevant information available.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

Additional ecological information:

General notes: Water hazard class 2 (Self-assessment): hazardous for water.
Do not allow product to reach ground water, water bodies or sewage system.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects No further relevant information available.

13 Disposal considerations

13.1 Waste treatment methods

Recommendation: Must be specially treated under adherence to official regulations.

13.2 Uncleaned packagings

Recommendation: Dispose of packaging according to regulations on the disposal of packagings.
14 Transport information

. 14.1 UN-Number
  - ADR, ADN, IATA: Void
. 14.2 UN proper shipping name
  - ADR, ADN, IATA: Void
. 14.3 Transport hazard class(es)
  - ADR, ADN, IATA: Void
. 14.4 Packing group
  - ADR, IATA: Void
. 14.5 Environmental hazards:
  - Marine pollutant: No
. 14.6 Special precautions for user
  - Not applicable.
. 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
  - Not applicable.
. Transport/Additional information: Not dangerous according to the above specifications.

15 Regulatory information

. 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
. National regulations:
  - Class: Share in %
    - Water: 2.5-10
    - NK: 50-100
  - Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.
. 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing data specification sheet: Environment protection department.
- Data compared to the previous version altered.

GB
1 Identification of the substance/mixture and of the company/undertaking

. Trade name: Dentatec
. Application of the substance / the preparation: Milling additive
. 1.3 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)6251/16-3440
Telefax:+49(0)6251/16-2935
Manufacturer:Graichen Produktions-und Vertriebs-GmbH
Darmstäderstraße 127-129
D-64625 Bensheim
. Informing department: Environment protection department
. 1.4 Emergency telephone number:
Advice centre for poisoning university Mainz phone +49(0)6131/19240
or poison information:+49(0)700/GIFTINFO

2 Hazards identification

2.1 Classification according to Directive 67/548/EEC or Directive 1999/45/EC

\[\times\] Xi: Irritant
R36/38: Irritating to eyes and skin.
\[\times\] Xi: Sensitising
R43: May cause sensitisation by skin contact.

Information concerning particular hazards for human and environment:
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:
The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

2.2 Label elements
Labelling according to EU guidelines:
The product has been classified and labelled in accordance with EC Directives / Ordinance on Hazardous Materials (GefStoffV)

Code letter and hazard designation of product:
\[\times\] Xi Irritant

Hazard-determining components of labelling:
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2HIsothiazol-3-one [EC no. 220-239-6] (3:1)

Risk phrases:
36/37 Wear suitable protective clothing and gloves.
46 If swallowed, seek medical advice immediately and show this container or label.
64 If swallowed, rinse mouth with water (only if the person is conscious).

Safety phrases:
24/25 Avoid contact with skin and eyes.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

2.3 Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 2)
3 Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description: Milling additive

Dangerous components:
- CAS: 52-51-7 bronopol (INN) < 2.5%
- CAS: 55965-84-9 mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) < 2.5%

4 First aid measures

4.1 Description of first aid measures
General information: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation: Supply fresh air; consult doctor in case of symptoms.

After skin contact: If skin irritation continues, consult a doctor.

After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

After swallowing: Rinse out mouth and then drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents: Water with a full water jet.

5.2 Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in case of fire. Sulphur dioxide (SO2)
Hydrogen chloride (HCl)
Nitrogen oxides (NOx)
Carbon monoxide (CO)
Carbon dioxide (CO2)
Hydrogen bromide (HBr)

5.3 Advice for firefighters
Protective equipment: Wear self-contained breathing apparatus.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use breathing protection against the effects of fumes/dust/aerosol.

6.2 Environmental precautions:
Do not allow to enter drainage system, surface or ground water.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.

(Contd. on page 3)
7 Handling and storage

7.1 Precautions for safe handling
No special precautions necessary if used correctly.

7.2 Conditions for safe storage, including any incompatibilities
No special measures required.

7.3 Specific end use(s)
Milling additive

8 Exposure controls/personal protection

8.1 Control parameters
Components with critical values that require monitoring at the workplace:

56-81-5 glycerol
WEL Long-term value: 10 mg/m³

8.2 Exposure controls
Personal protective equipment

General protective and hygienic measures
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.

Breathing equipment:
Not required.

Material of gloves
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.7 mm

Penetration time of glove material
Value for the permeation: Level ≥ 0.7 mm 480 min (8h)EN 374
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.

Not suitable are gloves made of the following materials:
Natural rubber, NR
PVA gloves

Eye protection:
Tightly sealed safety glasses.
9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance: Fluid
Form: Colourless
Colour: Colourless
Smell: Characteristic
Odour threshold: Not determined.

pH-value at 20°C: > 4

Change in condition
Melting point/Melting range: Not determined
Boiling point/Boiling range: 100°C

Flash point: 101°C

Inflammability (solid, gaseous) Not applicable.
Ignition temperature: 400°C
Decomposition temperature: Not determined.
Self-inflammability: Product is not selfigniting.
Danger of explosion: Not determined.

Critical values for explosion:
Lower: Not determined.
Upper: Not determined.

Steam pressure at 20°C: 0.1 hPa
Density at 20°C: 1.23238 g/cm³
Relative density: Not determined.
Vapour density: Not determined.
Evaporation rate: Not determined.

Solubility in / Miscibility with
Water: Fully miscible
Segregation coefficient (n-octanol/water): Not determined.

Viscosity:
dynamic: Not determined.
kineamic: Not determined.

9.2 Other information
No further relevant information available.

10 Stability and reactivity

10.1 Reactivity

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions

Forms explosive gas mixture with air
Reacts with strong oxidizing agents
No further relevant information available.

10.4 Conditions to avoid

10.5 Incompatible materials:

10.6 Hazardous decomposition products:

Hydrogen chloride (HCl)
Nitrous vitriol gases
Sulphur dioxide
**11 Toxicological information**

11.1 Information on toxicological effects

Acute toxicity:

- **LD/LC50 values that are relevant for classification:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Acute toxicity, oral</th>
<th>Acute toxicity, dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Brom-2-nitropropan-1,3-diol</td>
<td>254 mg/kg rat.</td>
<td>&gt;1600 mg/kg</td>
</tr>
<tr>
<td>mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td>457 mg/kg rat.</td>
<td>&gt;2000 mg/kg rat.</td>
</tr>
<tr>
<td>2-Brom-2-nitropropan-1,3-diol</td>
<td>660 mg/kg rabbit.</td>
<td></td>
</tr>
</tbody>
</table>

Primary irritant effect:

- **on the skin:**
  - Irritant for skin and mucous membranes.
- **on the eye:**
  - Irritant
- **Sensitization:**
  - Sensitization possible by skin contact.

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

- Irritant

**12 Ecological information**

12.1 Toxicity

Aquatic toxicity:

- **Acute toxicity:**
  - 2-Brom-2-nitropropan-1,3-diol
  - Aquatic toxicity LC50: 96h: 41.2 mg/l Oncorhynchus mykiss
  - LC50: 96h: 35.7 mg/l Lepomis macrochirus
  - EC50: 48h: 1.4 mg/l Daphnia magna
  - EC50: 72h: 0.4 mg/l Pseudokirchneriella subcapitata
  - EC50: 16h: >50 mg/l Pseudomonas putida
  - mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)
  - Aquatic toxicity LC50: 96h: 0.19 mg/l Oncorhynchus mykiss
  - LC50: 96h: 0.16 mg/l Lepomis macrochirus
  - EC50: 48h: 0.018 mg/l Pseudokirchneriella subcapitata
  - EC50: 16h: 5.7 mg/l Pseudomonas putida

12.2 Persistence and degradability: No further relevant information available.

12.3 Bioaccumulative potential: No further relevant information available.

12.4 Mobility in soil: No further relevant information available.

Additional ecological information:

- **General notes:**
  - Water hazard class 2 (Self-assessment): hazardous for water.
  - Do not allow product to reach ground water, water bodies or sewage system.

12.5 Results of PBT and vPvB assessment

- **PBT:**
  - Not applicable.
- **vPvB:**
  - Not applicable.

12.6 Other adverse effects: No further relevant information available.

**13 Disposal considerations**

13.1 Waste treatment methods

Recommendation:

- Must be specially treated under adherence to official regulations.

13.2 Uncleaned packagings

Recommendation:

- Dispose of packaging according to regulations on the disposal of packagings.
* **14 Transport information**

    . 14.1 UN-Number
    . ADR, ADN, IATA  Void

    . 14.2 UN proper shipping name
    . ADR, ADN, IATA  Void

    . 14.3 Transport hazard class(es)
    . ADR, ADN, IATA  Void
    . Class  Void

    . 14.4 Packing group
    . ADR, IATA  Void

    . 14.5 Environmental hazards:
    . Marine pollutant: No

    . 14.6 Special precautions for user
    . Not applicable.

    . 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
    . Not applicable.

    . Transport/Additional information:
    . Not dangerous according to the above specifications.

* **15 Regulatory information**

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

    . National regulations:

    | Class  | Share in % |
    |--------|------------|
    | Water  | 2,5-10     |
    | NK     | 50-100     |

    . Water hazard class:
    . Water hazard class 2 (Self-assessment): hazardous for water.

    . 15.2 Chemical safety assessment:
    . A Chemical Safety Assessment has not been carried out.

* **16 Other information**

    * These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.


    * Data compared to the previous version altered.