1 Identification

- Product identifier
  - Trade name: CLEARFIL Universal Bond Quick
- Article number: CA216
- Relevant identified uses of the substance or mixture and uses advised against
  No further relevant information available.
- Application of the substance / the mixture
  Dental bonding material

2 Hazard(s) identification

- Classification of the substance or mixture
  - GHS02 Flame
    Flammable Liquids - Category 3 H226 Flammable liquid and vapour.
  - GHS07
    Skin Irritation - Category 2 H315 Causes skin irritation.
    Eye Irritation - Category 2A H319 Causes serious eye irritation.
    Skin Sensitizer - Category 1 H317 May cause an allergic skin reaction.

- Label elements
  - GHS label elements
    The product is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms GHS02, GHS07
- Signal word Warning

- Hazard-determining components of labeling:
  Ethanol
  bisphenol A diglycidylmethacrylate
  2-hydroxyethyl methacrylate

- Hazard statements
  H226 Flammable liquid and vapour.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H317 May cause an allergic skin reaction.

(Contd. on page 2)
Trade name: CLEARFIL Universal Bond Quick

- **Precautionary statements**
  - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P240 Ground and bond container and receiving equipment.
  - P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
  - P243 Take actions to prevent static discharges.
  - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P321 Specific treatment (see on this label).
  - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances** None
- **Chemical characterization: Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

#### Dangerous components:

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Chemical Name</th>
<th>Hazards</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1565-94-2</td>
<td>Bisphenol A diglycidylmethacrylate</td>
<td>Skin Irritation - Category 2, H315; Eye Irritation - Category 2A, H319</td>
<td>10-25% w/w</td>
</tr>
<tr>
<td>64-17-5</td>
<td>Ethanol</td>
<td>Flammable Liquids - Category 2, H225; Carcinogenicity - Category 1A, H350</td>
<td>10-25% w/w</td>
</tr>
<tr>
<td>868-77-9</td>
<td>2-Hydroxyethyl methacrylate</td>
<td>Skin Irritation - Category 2, H315; Eye Irritation - Category 2A, H319; Skin Sensitizer - Category 1, H317</td>
<td>2.5-10% w/w</td>
</tr>
</tbody>
</table>

- **Other ingredients:**
  - 10-Methacryloyloxydecyl dihydrogen phosphate
  - Hydrophilic amide monomers
  - Colloidal silica
  - Silane coupling agent
  - Sodium fluoride
  - dl-Camphorquinone
  - Water

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**
  - Avoid contact with eyes.
  - Avoid contact with skin.
- **After inhalation:**
  - Supply fresh air and to be sure call for a doctor.
  - In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
  - Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
  - Rinse opened eye for several minutes under running water. If symptoms persist consult a doctor.
- **After swallowing:**
  - If symptoms persist consult doctor.
- **Information for doctor:**
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.

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Trade name: CLEARFIL Universal Bond Quick

(Contd. of page 2)

46.0.15

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

5 Fire-fighting measures

· Extinguishing media
  · Suitable extinguishing agents:
    CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  · Special hazards arising from the substance or mixture No further relevant information available.
  · Advice for firefighters
  · Protective equipment:
    Wear self-contained respiratory protective device.
    Wear fully protective suit.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
· Environmental precautions:
  Dilute with plenty of water.
  Do not allow to enter sewers/ surface or ground water.
· Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  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
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  · Information about protection against explosions and fires:
    Keep ignition sources away - Do not smoke.
    Protect against electrostatic charges.
· Conditions for safe storage, including any incompatibilities
  · Storage:
    · Requirements to be met by storerooms and receptacles: Store in a refrigerator (2-8°C).
    · Information about storage in one common storage facility:
      Store away from oxidizing agents.
      Store away from reducing agents.
  · Further information about storage conditions:
    Keep receptacle tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.
    Protect from heat and direct sunlight.
· Specific end use(s) No further relevant information available.

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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>EL Short-term value</th>
<th>EV Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 ethanol</td>
<td>1000 ppm</td>
<td>1,900 mg/m³, 1,000 ppm</td>
</tr>
</tbody>
</table>

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

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

Material of gloves

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.

Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

<table>
<thead>
<tr>
<th>Form:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor:</td>
<td>Alcohol-like</td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

pH-value at 20 °C: 2.3
Trade name: CLEARFIL Universal Bond Quick

- Change in condition
  - Melting point/Melting range: Not determined
  - Boiling point/Boiling range: Not determined

- Flash point: 36 °C

- Flammability (solid, gaseous): Not determined

- Ignition temperature: Not determined

- Decomposition temperature: Not determined

- Auto igniting: Not determined

- Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- Explosion limits:
  - Lower: Not determined
  - Upper: Not determined
  - Oxidizing properties: Not determined.

- Vapor pressure: Not determined

- Density: 1.1 g/cm³
  - Relative density: Not determined
  - Vapor density: Not determined
  - Evaporation rate: Not determined

- Solubility in / Miscibility with Water: Partly miscible.

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

- Viscosity: Not determined
  - Dynamic: Not determined
  - Kinematic: Not determined
  - 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 No dangerous reactions known.
- 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:
    - 64-17-5 ethanol
      - Oral LD50 3450 mg/kg (mouse)

(Contd. on page 6)
Trade name: CLEARFIL Universal Bond Quick

<table>
<thead>
<tr>
<th>Inhalative</th>
<th>LC50/4 h</th>
<th>7060 mg/kg (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LD50</td>
<td>20000 mg/l (rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3600 mg/kg (rat - intraperitoneal)</td>
</tr>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>868-77-9 2-hydroxyethyl methacrylate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4680 mg/kg (guinea pig)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3275 mg/kg (mouse)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5050 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:** Irritating effect.
  - **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**
  The product shows the following dangers according to internally approved calculation methods for preparations:
  - Irritant

- **Carcinogenic categories**

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 ethanol</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NTP (National Toxicology Program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

**12 Ecological information**

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **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:**
    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**

- **Waste treatment methods**
  - **Recommendation:**
    Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.
### 14 Transport information

- **UN-Number**
  - DOT, TDG, IMDG, IATA: UN1170

- **UN proper shipping name**
  - DOT: Ethanol mixture
  - TDG: 1170 Ethanol mixture
  - IMDG: ETHANOL (ETHYL ALCOHOL) mixture
  - IATA: ETHANOL mixture

- **Transport hazard class(es)**
  - **DOT**
    - Class: 3 Flammable liquids
    - Label: 3
  - **TDG, IMDG, IATA**
    - Class: 3 Flammable liquids
    - Label: 3

- **Packing group**
  - DOT, TDG, IMDG, IATA: III

- **Environmental hazards:**
  - **Marine pollutant:** No

- **Special precautions for user**
  - Warning: Flammable liquids
  - Danger code (Kemler): 30
  - EMS Number: F-E,S-D
  - Stowage Category: A

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.

- **Transport/Additional information:**
  - **TDG**
    - Excepted quantities (EQ)
      - Code: E1
      - Maximum net quantity per inner packaging: 30 ml
      - Maximum net quantity per outer packaging: 1000 ml
    - Maximum net quantity per outer packaging: 1000 ml

  - **IMDG**
    - Limited quantities (LQ)
      - 5L
    - Excepted quantities (EQ)
      - Code: E1
      - Maximum net quantity per inner packaging: 30 ml
      - Maximum net quantity per outer packaging: 1000 ml

  - **UN "Model Regulation":**
    - UN 1170 ETHANOL MIXTURE, 3, III

(Contd. on page 8)
5 Regulatory information

- Sara
  - Section 355 (extremely hazardous substances):
    None of the ingredient is listed.
  - Section 313 (Specific toxic chemical listings):
    None of the ingredients is listed.
  - SARA 311/312: See Section 2 for the information on physical and health hazards.
  - TSCA (Toxic Substances Control Act):
    All ingredients are listed.

- Canadian substance listings:
  - Canadian Domestic Substances List (DSL)
    All ingredients are listed.
  - Canadian Ingredient Disclosure list (limit 0.1%)
    64-17-5 ethanol
  - Canadian Ingredient Disclosure list (limit 1%)
    868-77-9 2-hydroxyethyl methacrylate

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.

* Data compared to the previous version altered.