1 Identification

- Product identifier
  - Trade name: CLEARFIL Universal Bond Quick
- Article number: US216
- 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

Details of the supplier of the safety data sheet

- Manufacturer:
  - Kuraray Noritake Dental Inc.
  - 1621 Sakazu, Kurashiki, Okayama 710-0801, Japan
- Contact information:
  - Kuraray America, Inc.
  - 33 Maiden Lane, 6th Floor, New York, NY 10038 U.S.A.
  - Tel: 800-879-1676
  - Fax: 888-700-5200
  - Website: www.kuraraydental.com
- Emergency telephone number:
  - For chemical emergency spill, leak, fire, exposure or accident
  - Call CHEMTREC day and night
  - Within USA and Canada: 1-800-424-9300 CCN70698 or
  - +1 703-527-3887 (collect calls accepted)

2 Hazard(s) identification

- Classification of the substance or mixture
  - GHS02 Flame
  - Flam. Liq. 3 H226 Flammable liquid and vapor.
  - GHS08 Health hazard
  - Carc. 1A H350 May cause cancer.
  - GHS07
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2A H319 Causes serious eye irritation.
  - Skin Sens. 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, GHS08
  - Signal word
    - Danger
- Hazard-determining components of labeling:
  - ethanol
  - 2-hydroxyethyl methacrylate
- Hazard statements
  - H226 Flammable liquid and vapor.
  - H315 Causes skin irritation.

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(Contd. of page 1)

H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H350 May cause cancer.

- **Precautionary statements**
  - P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  - P241 Use explosion-proof electrical/ventilating/lighting/equipment.
  - P242 Use only non-sparking tools.
  - P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.
  - P308+P313 IF exposed or concerned: Get medical advice/attention.
  - P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
  - P363 Wash contaminated clothing before reuse.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards**

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

- **3 Composition/information on ingredients**

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

  | Dangerous components: |
  |---------------------------------|-----------------|
  | 1565-94-2 bisphenol A diglycidylmethacrylate | Skin Irrit. 2, H315; Eye Irrit. 2A, H319 |
  | 64-17-5 ethanol | Flam. Liq. 2, H225; Carc. 1A, H350 |
  | 868-77-9 2-hydroxyethyl methacrylate | Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317 |

  - **Other ingredients:**
    - 10-Methacryloyloxydeyl 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.

(Contd. on page 3)
45.1.3 · After eye contact: Rif opened eye for several minutes under running water. If symptoms persist, consult a doctor.
45.1.3 · After swallowing: If symptoms persist consult doctor.
45.1.3 · Information for doctor:
45.1.3 · Most important symptoms and effects, both acute and delayed: No further relevant information available.
45.1.3 · Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Fire-fighting measures

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

6 Accidental release measures

6 · Personal precautions, protective equipment and emergency procedures
6 · Wear protective equipment. Keep unprotected persons away.
6 · Environmental precautions:
6 · Dilute with plenty of water.
6 · Do not allow to enter sewers/ surface or ground water.
6 · Methods and material for containment and cleaning up:
6 · Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
6 · Ensure adequate ventilation.
6 · Reference to other sections
6 · See Section 7 for information on safe handling.
6 · See Section 8 for information on personal protection equipment.
6 · See Section 13 for disposal information.

7 Handling and storage

7 · Handling:
7 · Precautions for safe handling
7 · Ensure good ventilation/exhaustion at the workplace.
7 · Prevent formation of aerosols.
7 · Information about protection against explosions and fires:
7 · Keep ignition sources away - Do not smoke.
7 · Protect against electrostatic charges.
7 · Conditions for safe storage, including any incompatibilities
7 · Storage:
7 · Requirements to be met by storerooms and receptacles: Store in a refrigerator (2-8 °C).
7 · Information about storage in one common storage facility:
7 · Store away from oxidizing agents.
7 · Store away from reducing agents.
7 · Further information about storage conditions:
7 · Keep receptacle tightly sealed.
7 · Store in cool, dry conditions in well sealed receptacles.
7 · Protect from heat and direct sunlight.
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- 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:
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL Long-term value</th>
<th>REL Long-term value</th>
<th>TLV Short-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>1900 mg/m³, 1000 ppm</td>
<td>1900 mg/m³, 1000 ppm</td>
<td>1880 mg/m³, 1000 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:**
    - Form: Liquid
    - Color: Yellow
  - **Odor:** Alcohol-like
  - **Odor threshold:** Not determined
  - **pH-value at 20 °C:** 2.3
  - **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**
  - **Vapor pressure:** Not determined
  - **Density:** 1.1 g/cm³
  - **Relative density**
  - **Vapor density**
  - **Evaporation rate**
  - **Solubility in / Miscibility with**
    - Water: Partly miscible.
  - **Partition coefficient (n-octanol/water):** Not determined.
  - **Viscosity:**
    - 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
Nitrogen oxides (NOx)

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)
        - 7060 mg/kg (rat)
        - Inhalative LC50/4 h 20000 mg/l (rat)
        - LD50 3600 mg/kg (rat - intraperitoneal)
      - 868-77-9 2-hydroxyethyl methacrylate
        - Oral LD50 4680 mg/kg (guinea pig)
        - 3275 mg/kg (mouse)
        - 5050 mg/kg (rat)

- 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

  - IARC (International Agency for Research on Cancer)
    - 64-17-5 ethanol 1

  - NTP (National Toxicology Program)
    - None of the ingredients is listed.

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, ADR, IMDG, IATA: UN1170

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

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

- Packing group
  DOT, ADR, 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:
  - ADR
    - Excepted quantities (EQ)
      - Code: E1
      - Maximum net quantity per inner packaging: 30 ml
      - Maximum net quantity per outer packaging: 1000 ml

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### 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

#### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - **Section 355 (extremely hazardous substances):** None of the ingredient is listed.
  - **Section 313 (Specific toxic chemical listings):** None of the ingredients is listed.
  - **TSCA (Toxic Substances Control Act):** All ingredients are listed.
  - **Proposition 65**
    - **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.
  - **Cancerogenity categories**
    - **EPA (Environmental Protection Agency)**: None of the ingredients is listed.
    - **TLV (Threshold Limit Value established by ACGIH)**: None of the ingredients is listed.
    - **NIOSH-Ca (National Institute for Occupational Safety and Health)**: None of the ingredients is listed.
  - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

#### 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.

- **Relevant phrases**
  - Highly flammable liquid and vapor.
  - Causes serious eye irritation.
  - H225 Highly flammable liquid and vapor.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H350 May cause cancer.
NFPA ratings (scale 0 - 4)

- Health: 1
- Fire: 3
- Reactivity: 0

HMIS-ratings (scale 0 - 4)

- Health: 1
- Fire: 3
- Reactivity: 0

Abbreviations and acronyms:
- Flam. Liq. 2: Flammable liquids – Category 2
- Flam. Liq. 3: Flammable liquids – Category 3
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
- Skin Sens. 1: Skin sensitisation – Category 1
- Carc. 1A: Carcinogenicity – Category 1A

* Data compared to the previous version altered.