1 Identification

- **Product identifier**
- **Trade name:** CLEARFIL NEW BOND ; UNIVERSAL
- **Article number:** CA022-U
- **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 CCN706984 or
    +1 703-527-3887 (collect calls accepted)

2 Hazard(s) identification

- **Classification of the substance or mixture**
  - GHS02 Flame
  - Flammable Liquids - Category 2 H225 Highly flammable liquid and vapour.
- **Label elements**
  - **GHS label elements**
    The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    GHS02
  - **Signal word**
    Danger
  - **Hazard statements**
    H225 Highly flammable liquid and vapour.
- **Precautionary statements**
  - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P233 Keep container tightly closed.
  - P240 Ground and bond container and receiving equipment.
  - P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
  - P242 Use non-sparking tools.
  - P243 Take actions to prevent static discharges.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
  - P403+P235 Store in a well-ventilated place. Keep cool.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

- Chemical characterization: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

* Dangerous components:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Description</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5</td>
<td>ethanol</td>
<td>&gt;90% w/w</td>
</tr>
<tr>
<td></td>
<td>Flammable Liquids - Category 2, H225; Carcinogenicity - Category 1A, H350</td>
<td></td>
</tr>
</tbody>
</table>

- Other ingredients:
  - Catalysts
  - Accelerators

4 First-aid measures

- Description of first aid measures
  - After inhalation: Supply fresh air; consult doctor in case of complaints.
  - After skin contact: Generally the product does not irritate the skin.
  - After eye contact: Rinse opened eye for several minutes under running water.
  - After swallowing: Do not induce vomiting; immediately call for medical help.
    If symptoms persist consult doctor.

- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - 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: See Section 8.
- 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.

(Contd. on page 3)
7 Handling and storage

· Handling:
  · Precautions for safe handling: Ensure good ventilation/exhaustion at the workplace.
  · 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>Component</th>
<th>EL</th>
<th>EV</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 ethanol</td>
<td>Short-term value: 1000 ppm</td>
<td>Long-term value: 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: Wash hands before breaks and at the end of work.
  · Breathing equipment: Not required.

· Protection of hands:
  The glove material has to be impermeable and resistant to the product/substance/preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/preparation/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.
9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:**
    - Form: Liquid
    - Color: Transparent
    - Odor: Alcohol-like
  - **pH-value:** Not determined.
  - **Change in condition**
    - Melting point/Melting range: -114.5 °C (ethanol)
    - Boiling point/Boiling range: 78 °C (ethanol)
  - **Flash point:** 13°C (ethanol)
  - **Ignition temperature:** 425.0 °C (ethanol)
  - **Decomposition temperature:** Not determined.
  - **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
  - **Explosion limits:**
    - Lower: 3.5 Vol % (ethanol)
    - Upper: 15.0 Vol % (ethanol)
  - **Oxidizing properties:** Not determined.
  - **Vapor pressure:** 59.0 hPa (20°C, ethanol)
  - **Density:** 0.8 g/cm³
  - **Relative density**
    - Not determined.
  - **Vapor density**
    - 1.6 g/cm³ (ethanol, air=1)
  - **Evaporation rate**
    - Not determined.
  - **Solubility in / Miscibility with Water:** Fully miscible.
  - **Partition coefficient (n-octanol/water):** -0.32 (ethanol)
  - **Viscosity:** 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.
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) |

- Primary irritant effect:
  - on the skin: No irritant effect.
  - on the eye: No irritating effect.
  - Sensitization: No sensitizing effects known.
- Additional toxicological information:

- 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.

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.
· Recommended cleansing agent: Water, if necessary with cleansing agents.

**14 Transport information**

- **UN-Number**
  - DOT: UN1170
  - TDG, IMDG, IATA: 1170
- **UN proper shipping name**
  - DOT: Ethanol solutions
  - TDG: 1170 Ethanol solutions (Ethyl alcohol solutions)
  - IMDG: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
  - IATA: ETHANOL SOLUTION
- **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: II
- **Environmental hazards:**
  - Marine pollutant: No
- **Special precautions for user**
  - Danger code (Kemler): Warning: Flammable liquids
  - EMS Number: 33, F-E,S-D
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.
- **UN "Model Regulation":**
  - UN1170, Ethanol solutions (Ethyl alcohol solutions), 3, II

**15 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.
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- **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%)**
    All ingredients are listed.
  - **Canadian Ingredient Disclosure list (limit 1%)**
    None of the ingredients is listed.

* **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.*