1 Identification

- Product identifier
  - Trade name: CLEARFIL DC BOND ; Liquid B
  - Article number: US107-B
- 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
    Flam. Liq. 3 H226 Flammable liquid and vapor.
  - GHS08 Health hazard
    Carc. 1A H350 May cause cancer.

- Label elements
  - GHS label elements
    The product is classified and labeled according to the Globally Harmonized System (GHS).
  - Hazard pictograms
    GHS02, GHS08
  - Signal word
    Danger

- Hazard-determining components of labeling:
  - ethanol

- Hazard statements
  - H226 Flammable liquid and vapor.
  - H350 May cause cancer.

- Precautionary statements
  - P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  - P240 Ground/bond container and receiving equipment.
  - P241 Use explosion-proof electrical/ventilating/lighting/equipment.
  - P242 Use only non-sparking tools.
  - P243 Take precautionary measures against static discharge.
  - P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
  - P403+P235 Store in a well-ventilated place. Keep cool.

(Contd. on page 2)
Trade name: CLEARFIL DC BOND ; Liquid B

P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards**: Dust generation.
- **Results of PBT and vPvB assessment**
  - **PBT**: Not applicable.
  - **vPvB**: Not applicable.

### 3 Composition/information on ingredients

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

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 ethanol</td>
<td>Flam. Liq. 2, H225; Carc. 1A, H350 30-60%</td>
</tr>
</tbody>
</table>

- **Other ingredients**:
  - Water
  - Accelerators
  - Catalysts

### 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**: 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**
  - 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.
Trade name: CLEARFIL DC BOND ; Liquid B

**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>Substance</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-17-5 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:** 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/ 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.
Trade name: CLEARFIL DC BOND ; Liquid B

- Eye protection:

  Tightly sealed goggles

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 applicable
  - 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:
    - Not determined
  - 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.
Trade name: CLEARFIL DC BOND ; Liquid B

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

### 14 Transport information

<table>
<thead>
<tr>
<th><strong>UN-Number</strong></th>
<th>UN1170</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOT, ADR, IMDG, IATA</strong></td>
<td>Ethanol solutions</td>
</tr>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>1170 Ethanol solutions (Ethyl alcohol solutions)</td>
</tr>
<tr>
<td><strong>DOT</strong></td>
<td>Ethanol solutions (ETHYL ALCOHOL SOLUTION)</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>ETHANOL SOLUTION</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td>ETHANOL SOLUTION</td>
</tr>
<tr>
<td><strong>IATA</strong></td>
<td>ETHANOL SOLUTION</td>
</tr>
</tbody>
</table>

- **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**: II

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

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

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

- **Transport/Additional information:**
  - **DOT**
    - **Quantity limitations**
      - On passenger aircraft/rail: 60 L
      - On cargo aircraft only: 220 L
  - **ADR**
    - **Excepted quantities (EQ)**
      - Code: E2
      - Maximum net quantity per inner packaging: 30 ml
      - Maximum net quantity per outer packaging: 500 ml
  - **IMDG**
    - **Limited quantities (LQ)**: 5L
    - **Code**: E1
    - **Excepted quantities (EQ)**
      - Maximum net quantity per inner packaging: 30 ml
      - Maximum net quantity per outer packaging: 1000 ml
**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:**
        64-17-5 ethanol

- **Cancerogeny categories**

  - **EPA (Environmental Protection Agency)**
    None of the ingredients is listed.
  - **TLV (Threshold Limit Value established by ACGIH)**
    64-17-5 ethanol A4
  - **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**
  - H225 Highly flammable liquid and vapor.
  - H350 May cause cancer.
- **NFPA ratings (scale 0 - 4)**
  - Health = 0
  - Fire = 3
  - Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**
  - Health = 0
  - Fire = 3
  - Reactivity = 0
Abbreviations and acronyms:
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Carc. 1A: Carcinogenicity – Category 1A

* Data compared to the previous version altered.