SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
   - Trade name: iBond Universal

1.2 Relevant identified uses of the substance or mixture and uses advised against
   - Application of the substance / the mixture: Dental bonding material
   - No further relevant information available.

1.3 Details of the supplier of the safety data sheet
   - Manufacturer/Supplier: Kulzer GmbH
     Leipziger Straße 2, 63450 Hanau (Germany) Tel.: +49 (0)800 4372522
   - Informing department: E-Mail: msds@kulzer-dental.com
   - Emergency telephone number: Emergency CONTACT (24-Hour-Number): +49 (0)6132-84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   - Classification according to Regulation (EC) No 1272/2008
     Flam. Liq. 2 H225 Highly flammable liquid and vapour.
     Skin Irrit. 2 H315 Causes skin irritation.
     Eye Irrit. 2 H319 Causes serious eye irritation.
     Skin Sens. 1 H317 May cause an allergic skin reaction.
     STOT SE 3 H336 May cause drowsiness or dizziness.

2.2 Label elements
   - Labelling according to Regulation (EC) No 1272/2008
     The product is classified and labelled according to the CLP regulation.

   - Hazard pictograms
     GHS02
     GHS07

   - Signal word: Danger

   - Hazard-determining components of labelling:
     4-methacryloxyethyltrimellitic acid anhydride
     acetone

   - Hazard statements
     H225 Highly flammable liquid and vapour.
     H315 Causes skin irritation.
     H319 Causes serious eye irritation.
     H317 May cause an allergic skin reaction.
     H336 May cause drowsiness or dizziness.

   - Precautionary statements
     P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
     P241 Use explosion-proof electrical/ventilating/lighting/equipment.
     P303+P361+P353 IF ON SKIN (or hair): Remove/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.
     P321 Specific treatment (see on this label).
     P405 Store locked up.

2.3 Other hazards -

(Contd. on page 2)
Trade name: iBond Universal

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

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
  - Description:
  - Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Name</th>
<th>Hazard phrases</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>acetone</td>
<td>Flam. Liq. 2, Eye Irrit. 2, STOT SE 3</td>
<td>25-50%</td>
</tr>
<tr>
<td>70293-55-9</td>
<td>4-methacryloxyethyltrimellitic acid anhydride</td>
<td>Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1</td>
<td>10-25%</td>
</tr>
</tbody>
</table>

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - After inhalation
    Supply fresh air and call for doctor for safety reasons.
    In case of unconsciousness bring patient into stable side position for transport.
  - 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.
    In case of persistent symptoms consult 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.

SECTION 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
    Can form explosive gas-air mixtures.
    Formation of toxic gases is possible during heating or in case of fire.

- 5.3 Advice for firefighters
  - Protective equipment: No special measures required.
  - Additional information: -

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.

- 6.2 Environmental precautions: Prevent material from reaching sewage system, holes and cellars.

- 6.3 Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).
Trade name: iBond Universal

Ensure adequate ventilation.
Send for recovery or disposal in suitable containers.

6.4 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 information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Keep containers tightly sealed.

7.2 Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and containers: Store in cool location.
Information about storage in one common storage facility: Not required.
Further information about storage conditions:
Keep receptacle tightly sealed.
Protect from the effects of light.
Store in cool, dry conditions in well sealed containers.

7.3 Specific end use(s)
No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

67-64-1 acetone

WEL
Short-term value: 3620 mg/m³, 1500 ppm
Long-term value: 1210 mg/m³, 500 ppm

DNELs
67-64-1 acetone

Oral ge.pop., l.te, syst. 62 mg/Kg (nd)
worker profess., acute, syst. 2420 mg/Kg/d (nd)
worker profess., l.te., syst. 186 mg/Kg/d (nd)
ge.pop., l.te, syst. 62 mg/Kg (nd)

Inhalative worker profess., l.te., syst. 1210 mg/m³ (nd)
ge.pop., l.te, syst. 200 mg/m³ (nd)

PNECs
67-64-1 acetone

freshwater 10.6 mg/l (nd)
marine water 1.06 mg/l (rabbit)
STP 19.5 mg/l (nd)
sedim., dw, fre.wat. 30.4 mg/Kg (nd)
sedim., dw, mar.wat. 3.04 mg/Kg (nd)
soil,dw 0.112 mg/Kg (nd)
Trade name: iBond Universal

- 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
      Avoid contact with the eyes.
      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.
      Avoid contact with the eyes and skin.
    - Breathing equipment: Not required.
  - Protection of hands:
    - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
    - If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.
    - Check protective gloves prior to each use for their proper condition.
  - 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.
    - For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:
      - Butyl rubber, BR
      - Nitrile rubber, NBR
  - Eye protection: Safety glasses
  - Body protection: Light weight protective clothing

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Liquid
      - Colour: Clear
    - Smell: Characteristic
    - Odour threshold: Not determined.
  - pH-value: Not determined.
  - Change in condition
    - Melting point/Melting range: Not determined
    - Boiling point/Boiling range: Not determined
  - Flash point: -19 °C
  - Inflammability (solid, gaseous) Not applicable.
Trade name: iBond Universal

- Ignition temperature:
  - Decomposition temperature: Not determined.
- Self-inflammability: Product is not selfigniting.
- Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures is possible.
  - Critical values for explosion:
    - Lower: Not determined.
    - Upper: Not determined.
- Steam pressure: Not determined.
  - Density: Not determined
    - Relative density: Not determined.
    - Vapour density: Not determined.
    - Evaporation rate: Not determined.
  - Solubility in / Miscibility with: Water: Partly miscible
  - Partition coefficient (n-octanol/water): Not determined.
  - Viscosity:
    - dynamic: Not determined.
    - kinematic: Not determined.
  - Solvent content:
    - Water: 19.0 %
  - Solids content: 19.1 %
- 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

- 10.1 Reactivity: No further relevant information available.
- 10.2 Chemical stability
  - Conditions to be avoided: Protect from heat and direct sunlight.
- 10.3 Possibility of hazardous reactions: No dangerous reactions known
- 10.4 Conditions to avoid: No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: None
  - Additional information: -

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
  - Acute toxicity: Based on available data, the classification criteria are not met.
    - LD/LC50 values that are relevant for classification:
      - 67-64-1 acetone
        - Oral LD50 5800 mg/kg (rat)
        - Dermal LD50 20000 mg/kg (rabbit)
      - 41137-60-4 diurethandimethacrylate
        - Oral LD50 >5000 mg/kg (rat)
Trade name: iBond Universal

70293-55-9 4-methacryloyloxyethyltrimellitic acid anhydride

<table>
<thead>
<tr>
<th>Oral</th>
<th>LD50</th>
<th>&gt; 2000 mg/kg (mouse)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>&gt; 2000 mg/kg (mouse)</td>
</tr>
</tbody>
</table>

· Primary irritant effect:
  · Skin corrosion/irritation
    Causes skin irritation.
  · Serious eye damage/irritation
    Causes serious eye irritation.

· Respiratory or skin sensitisation
  May cause an allergic skin reaction.

· CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
  · Germ cell mutagenicity Based on available data, the classification criteria are not met.
  · Carcinogenicity Based on available data, the classification criteria are not met.
  · Reproductive toxicity Based on available data, the classification criteria are not met.

· STOT-single exposure
  May cause drowsiness or dizziness.

· STOT-repeated exposure Based on available data, the classification criteria are not met.

· Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

  · Aquatic toxicity:

    67-64-1 acetone

    | EC50/48h | 6100 mg/l (daphnia) |
    | LC50/96h | 5540 mg/l (fish) |

    · 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:
        Do not allow product to reach ground water, water bodies or sewage system.
        Danger to drinking water if even small quantities leak into soil.
    · 12.5 Results of PBT and vPvB assessment
      · PBT: Not applicable.
      · vPvB: Not applicable.
    · 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

  · Recommendation
  Disposal must be made according to official regulations.
  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.
## SECTION 14: Transport information

- **14.1 UN-Number**
  - ADR, IMDG, IATA: UN1090

- **14.2 UN proper shipping name**
  - ADR: 1090 ACETONE, mixture
  - IMDG, IATA: ACETONE, mixture

- **14.3 Transport hazard class(es)**
  - **ADR**
    - Class: 3 (F1) Flammable liquids.
    - Label: 3
  - **IMDG, IATA**
    - Class: 3 Flammable liquids.
    - Label: 3

- **14.4 Packing group**
  - ADR, IMDG, IATA: II

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

- **14.6 Special precautions for user**
  - Kemler Number: 33
  - EMS Number: F-E, S-D

- **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.

- **Transport/Additional information:**
  - **ADR**
    - Limited quantities (LQ): 1 L
    - Transport category: 2
    - Tunnel restriction code: D/E
  - **UN "Model Regulation"**: UN1090, ACETONE, mixture, 3, II

## SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - REGULATION (EC) No 1907/2006 ANNEX XVII: Conditions of restriction: 3

- **15.2 Chemical safety assessment**
  - A Chemical Safety Assessment has not been carried out.
SECTION 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.

- **Relevant phrases**
  - H225 Highly flammable liquid and vapour.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H336 May cause drowsiness or dizziness.

- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - DNEL: Derived No-Effect Level (REACH)
  - PNEC: Predicted No-Effect Concentration (REACH)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Flm. Liq. 2: Flammable liquids – Category 2
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  - Skin Sens. 1: Skin sensitisation – Category 1
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

- **Data compared to the previous version altered.**