### 1 Identification

- **Product identifier**  
  - **Trade name:** CLEARFIL PHOTO BOND ; CATALYST
  - **Article number:** US023-C
  - **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**
  - ! [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** GHS07
  - **Signal word** Warning

- **Hazard-determining components of labeling:**
  - 2-hydroxyethyl methacrylate
  - benzoyl peroxide

- **Hazard statements**
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H317 May cause an allergic skin reaction.

- **Precautionary statements**
  - P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  - P264 Wash thoroughly after handling.
  - P280 Wear protective gloves / eye protection / face protection.
  - P302+P352 IF ON SKIN: Wash with plenty of water.
  - 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.

(Contd. on page 2)
Trade name: CLEARFIL PHOTO BOND ; CATALYST

45.1.3

P337+P313 If eye irritation persists: 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.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1565-94-2 bisphenol A diglycidylmethacrylate</td>
<td>Skin Irrit. 2, H315; Eye Irrit. 2A, H319 20-40%</td>
</tr>
<tr>
<td>868-77-9 2-hydroxyethyl methacrylate</td>
<td>Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317 5-25%</td>
</tr>
<tr>
<td>94-36-0 benzoyl peroxide</td>
<td>Unst. Expl., H200; Org. Perox. E, H242; Eye Irrit. 2A, H319; Skin Sens. 1, H317 &lt;2.5%</td>
</tr>
</tbody>
</table>

· Other ingredients:
  10-Methacryloyloxydecyl dihydrogen phosphate
  Hydrophobic aliphatic dimethacrylate
  dl-Camphorquinone

4 First-aid measures

· Description of first aid measures
  · 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: 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.
6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **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:** No special measures required.
- **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:**
  The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  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: Odorless
    - pH-value: Not determined
  - Change in condition
    - Melting point/Melting range: -12 °C (2-hydroxyethyl methacrylate)
    - Boiling point/Boiling range: 205 °C (2-hydroxyethyl methacrylate)
  - Flash point: 97 °C (2-hydroxyethyl methacrylate)
  - Ignition temperature: Not determined
  - Decomposition temperature: Not determined
  - Danger of explosion: Product does not present an explosion hazard.
  - 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
Trade name: CLEARFIL PHOTO BOND ; CATALYST

Solubility in / Miscibility with Water: Partly miscible.
Partition coefficient (n-octanol/water): Not determined.
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.
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:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Oral LD50</th>
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</tr>
</thead>
<tbody>
<tr>
<td>868-77-9 2-hydroxyethyl methacrylate</td>
<td>4680 mg/kg (guinea pig)</td>
<td>3275 mg/kg (mouse)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5050 mg/kg (rat)</td>
</tr>
<tr>
<td>94-36-0 benzoyl peroxide</td>
<td>5700 mg/kg (mouse)</td>
<td>7710 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td>250 mg/kg (mouse - intraperitoneal)</td>
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</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
- IARC (International Agency for Research on Cancer)
  94-36-0 benzoyl peroxide 3
- NTP (National Toxicology Program)
  None of the ingredients is listed.

12 Ecological information

Toxicity
Aquatic toxicity: 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, ADR, ADN, IMDG, IATA: Void

- **UN proper shipping name**
  - DOT, ADR, ADN, IMDG, IATA: Void

- **Transport hazard class(es)**
  - DOT, ADR, ADN, IMDG, IATA: Void

- **Packing group**
  - DOT, ADR, IMDG, IATA: Void

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

- **Special precautions for user**
  - Not applicable.

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

- **UN "Model Regulation":**
  - Void

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):

- **94-36-0 benzoyl peroxide**

### 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)**
  94-36-0 benzoyl peroxide
  
  
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<td>1</td>
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<td>0</td>
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- **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**
  H200 Unstable explosive.
  H242 Heating may cause a fire.
  H315 Causes skin irritation.
  H317 May cause an allergic skin reaction.
  H319 Causes serious eye irritation.

- **NFPA ratings (scale 0 - 4)**
  
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- **HMIS-ratings (scale 0 - 4)**
  
  | Health | Fire | Reactivity |
  | 1 | 1 | 0 |

- **Abbreviations and acronyms:**
  Unst. Expl.: Explosives – Unstable explosive
  Org. Perox. E: Organic peroxides – Type E/F
  Skin Irrit.: Skin irritation
  Skin Sens.: Skin sensitisation

* Data compared to the previous version altered.