SAFETY DATA SHEET
ESTECEM II PASTE A / B

1. Identification

Product identifier

Product name ESTECEM II PASTE A / B

Recommended use of the chemical and restrictions on use

Application Adhesive resin cement. For dental professionals only.

Details of the supplier of the safety data sheet

Supplier Tokuyama Dental America, Inc.
740 Garden View CT., Suite 200 Encinitas,
CA 92024 U.S.A.
Tel: (877) 378 3548 (Toll-Free)
Tel: (760) 942-7211
Fax: (760) 942-7212

Contact Person http://www.tokuyama-dental.com/tdc/contact.html

Manufacturer Tokuyama Dental Corporation
38-9, Taitou 1-chome, Taitou-ku, Tokyo
110-0016, Japan
TEL: +81-3-3835-2261
FAX: +81-3-3835-2265

Emergency telephone number

Emergency telephone California Poison Control System - San Francisco Division
San Francisco General Hospital
Bldg 5 Rm 2A21, 1001 Potrero Ave, San Francisco
Emergency telephone number: +1 800 222 1222
E-mail address: cadmin@calpoison.org
http://www.calpoison.org

National Capital Poison Center
3201 New Mexico Ave, Ste 310, Washington DC
Emergency telephone number: +1 800 222 1222
Telephone number: +1 202 362 3867
Facsimile numer: +1 202 362 8377
E-mail address: pc@poison.org
http://www.poison.org

2. Hazard(s) identification

Classification of the substance or mixture

OSHA Regulatory Status This Product is Hazardous under the OSHA Hazard Communication Standard.

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315: Eye Irrit. 2A - H319: Skin Sens. 1 - H317

Environmental hazards Not Classified

Label elements
ESTECEM II PASTE A / B

Pictogram

Signal word Warning

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

Precautionary statements
P261 Avoid breathing vapors.
P264 Wash contaminated skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ 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 medical advice on this label).
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P501 Dispose of contents/ container in accordance with local regulations.

Contains
POLY(OXY-1,2-ETHANEDIYL),.alpha.,.alpha.'-[(1-METHYLETHYLIDENE)DI-4,1-PHENYLENE]BIS[.omega.-[(2-METHYL-1-OXO-2-PROPENYL)OXY]-, TRIETHYLENE GLYCOL DIMETHACRYLATE, 2-PROPENOIC ACID, 2-METHYL-, (1-METHYLETHYLIDENE)BIS[4,1-PHENYLENEOXY(2-HYDROXY-3,1-PROPANEDIYL)] ESTER, BENZOYL PEROXIDE, ETHANOL, 2,2'-(4-METHYLPHENYL)IMINO]BIS-

Other hazards
Hazards not otherwise classified (HNOC) Not applicable.

3. Composition/Information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Mixtures</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BISPHENOL A POLYETHOXY DIMETHACRYLATE</td>
<td>10-30%</td>
</tr>
<tr>
<td>CAS number: 41637-38-1</td>
<td></td>
</tr>
<tr>
<td>TRIETHYLENE GLYCOL DIMETHACRYLATE</td>
<td>10-30%</td>
</tr>
<tr>
<td>CAS number: 109-16-0</td>
<td></td>
</tr>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, (1-METHYLETHYLIDENE)BIS[4,1-PHENYLENEOXY(2-HYDROXY-3,1-PROPANEDIYL)] ESTER</td>
<td>1-5%</td>
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<tr>
<td>CAS number: 1565-94-2</td>
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<tr>
<td>TITANIUM DIOXIDE</td>
<td>&lt;1%</td>
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<tr>
<td>CAS number: 13463-67-7</td>
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</tbody>
</table>
ESTECM II PASTE A / B

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Concentration</th>
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</thead>
<tbody>
<tr>
<td>BENZOYL PEROXIDE</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>CAS number: 94-36-0</td>
<td></td>
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<tr>
<td>p-TOLYL DIETHANOLLAMINE</td>
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<td>CAS number: 3077-12-1</td>
<td></td>
</tr>
<tr>
<td>N,N-DIMETHYL-p-TOLUIDINE</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>CAS number: 99-97-8</td>
<td></td>
</tr>
</tbody>
</table>

### 4. First-aid measures

#### Description of first aid measures

**General information**
Move affected person to fresh air at once. Get medical attention if any discomfort continues.

**Inhalation**
Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.

**Ingestion**
Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if any discomfort continues.

**Skin Contact**
Wash skin thoroughly with soap and water. Take off contaminated clothing and wash it before reuse.

**Eye contact**
Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.

#### Most important symptoms and effects, both acute and delayed

**Skin contact**
Skin irritation. Allergic rash.

**Eye contact**
May cause severe eye irritation.

#### Indication of immediate medical attention and special treatment needed

**Notes for the doctor**
No specific recommendations.

### 5. Fire-fighting measures

#### Extinguishing media

**Suitable extinguishing media**
Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

**Special hazards arising from the substance or mixture**

**Specific hazards**
In case of fire, toxic gases may be formed.

**Hazardous combustion products**
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

#### Advice for firefighters

**Protective actions during firefighting**
Avoid breathing fire gases or vapors. Keep up-wind to avoid fumes. Move containers from fire area if it can be done without risk. Containers close to fire should be removed or cooled with water. No smoking, sparks, flames or other sources of ignition near spillage.

**Special protective equipment for firefighters**
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

### 6. Accidental release measures
ESTECM II PASTE A / B

Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage.

Environmental precautions

Environmental precautions
Avoid discharge into drains or watercourses or onto the ground.

Methods and material for containment and cleaning up

Methods for cleaning up
Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Keep combustible materials away from spillage. Absorb in vermiculite, dry sand or earth and place into containers. Avoid the spillage or runoff entering drains, sewers or watercourses. Use only non-sparking tools.

Reference to other sections
For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions
All handling should only take place in well-ventilated areas. Keep away from heat, sparks and open flame. Good personal hygiene procedures should be implemented. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Take any precaution to avoid mixing with combustibles and reducing agents.

Conditions for safe storage, including any incompatibilities

Storage precautions
Keep away from heat, direct sunlight, sparks and open flames. Store in a cool, dark place (0 - 10 °C, 32 - 50 °F).

Specific end use(s)

Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

TITANIUM DIOXIDE
Long-term exposure limit (8-hour TWA): ACGIH 10 mg/m³
A4
Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³ total dust

BENZOYL PEROXIDE
Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³
Long-term exposure limit (8-hour TWA): ACGIH 5 mg/m³
A4
ACGIH = American Conference of Governmental Industrial Hygienists.
OSHA = Occupational Safety and Health Administration.
A4 = Not Classifiable as a Human Carcinogen.

Exposure controls

Appropriate engineering controls
Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection
The following protection should be worn: Chemical splash goggles.

Hand protection
Wear protective gloves.

Other skin and body protection
Wear appropriate clothing to prevent any possibility of skin contact.
ESTECM II PASTE A / B

Hygiene measures
Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station and safety shower. Do not smoke in work area. Promptly remove any clothing that becomes contaminated. Wash promptly with soap and water if skin becomes contaminated. Wash hands at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke.

Respiratory protection
If ventilation is inadequate, suitable respiratory protection must be worn.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Paste</td>
</tr>
<tr>
<td>Color</td>
<td>Clear, white to brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not available.</td>
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<tr>
<td>Initial boiling point and range</td>
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</tr>
<tr>
<td>Flash point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation factor</td>
<td>Not available.</td>
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<tr>
<td>Flammability (solid, gas)</td>
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<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
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</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
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<tr>
<td>Solubility(ies)</td>
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<tr>
<td>Partition coefficient</td>
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<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
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<tr>
<td>Viscosity</td>
<td>Not available.</td>
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<tr>
<td>Explosive properties</td>
<td>Not available.</td>
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<td>Oxidizing properties</td>
<td>Not available.</td>
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<tr>
<td>Other information</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Reactivity
There are no known reactivity hazards associated with this product.

Stability
Stable under the prescribed storage conditions.
**ESTECM II PASTE A / B**

**Possibility of hazardous reactions**
Not known.

**Conditions to avoid**
Keep away from heat, sparks and open flame. Protect against direct sunlight.

**Materials to avoid**
Flammable/combustible materials. Strong reducing agents.

**Hazardous decomposition products**
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. Carbon monoxide (CO). Carbon dioxide (CO\(_2\)).

### 11. Toxicological information

<table>
<thead>
<tr>
<th>Information on toxicological effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Routes of exposure</strong></td>
</tr>
<tr>
<td><strong>Notes (oral LD(_{50}))</strong></td>
</tr>
<tr>
<td><strong>Notes (dermal LD(_{50}))</strong></td>
</tr>
<tr>
<td><strong>Notes (inhalation LC(_{50}))</strong></td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
</tr>
<tr>
<td><strong>Animal data</strong></td>
</tr>
<tr>
<td><strong>Serious eye damage/irritation</strong></td>
</tr>
<tr>
<td><strong>Respiratory sensitization</strong></td>
</tr>
<tr>
<td><strong>Skin sensitization</strong></td>
</tr>
<tr>
<td><strong>Germ cell mutagenicity</strong></td>
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<tr>
<td><strong>Genotoxicity - in vitro</strong></td>
</tr>
<tr>
<td><strong>Genotoxicity - in vivo</strong></td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
</tr>
<tr>
<td><strong>IARC carcinogenicity</strong></td>
</tr>
<tr>
<td><strong>NTP carcinogenicity</strong></td>
</tr>
<tr>
<td><strong>OSHA Carcinogenicity</strong></td>
</tr>
<tr>
<td><strong>Reproductive toxicity</strong></td>
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<tr>
<td><strong>Reproductive toxicity - fertility</strong></td>
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<tr>
<td><strong>Reproductive toxicity - development</strong></td>
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<tr>
<td><strong>Specific target organ toxicity - single exposure</strong></td>
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<tr>
<td><strong>STOT - single exposure</strong></td>
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<tr>
<td><strong>Specific target organ toxicity - repeated exposure</strong></td>
</tr>
<tr>
<td><strong>STOT - repeated exposure</strong></td>
</tr>
</tbody>
</table>
ESTECEM II PASTE A / B

Aspiration hazard
Aspiration hazard Not available.

Toxicological information on ingredients.

TITANIUM DIOXIDE

Carcinogenicity
IARC carcinogenicity IARC Group 2B Possibly carcinogenic to humans.
NTP carcinogenicity Reasonably anticipated to be a human carcinogen.
OSHA Carcinogenicity Not listed.

BENZOYL PEROXIDE

Carcinogenicity
IARC carcinogenicity IARC Group 3 Not classifiable as to its carcinogenicity to humans.
NTP carcinogenicity Reasonably anticipated to be a human carcinogen.
OSHA Carcinogenicity Not listed.

N,N-DIMETHYL-p-TOLUIDINE

Acute toxicity - oral
ATE oral (mg/kg) 100.0

Acute toxicity - dermal
ATE dermal (mg/kg) 300.0

12. Ecological Information

Toxicity
Acute toxicity - fish Not available.
Acute toxicity - aquatic invertebrates Not available.
Acute toxicity - aquatic plants Not available.

Persistence and degradability
Persistence and degradability No data available.

Bioaccumulative potential
Bio-Accumulative Potential No data available on bioaccumulation.
Partition coefficient Not available.

Mobility in soil
Mobility No information available.

Results of PBT and vPvB assessment
This product does not contain any substances classified as PBT or vPvB.

Other adverse effects
Not known.
ESTECM II PASTE A / B

13. Disposal considerations

Waste treatment methods
Disposal methods: Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. Transport information

General: The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DoT).

UN Number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class(es): Not applicable.

Packing group: Not applicable.

Environmental hazards
Environmentally Hazardous Substance: No.

Special precautions for user:
Avoid exposure to high temperatures or direct sunlight. Keep away from heat, sparks and open flame. Protect against physical damage and/or friction. Take appropriate measures to prevent load shifting. Keep away from food, drink and animal feeding stuffs.

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

15. Regulatory information

Regulatory Status: This Product is Hazardous under the OSHA Hazard Communication Standard.


International Regulations

US Federal Regulations
SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

TITANIUM DIOXIDE
Not listed.

BENZOYL PEROXIDE
Not listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

TITANIUM DIOXIDE
Not listed.
ESTECEM II PASTE A / B

BENZOYL PEROXIDE
Not listed.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
TITANIUM DIOXIDE
Not listed.
BENZOYL PEROXIDE
Not listed.

SARA 313 Emission Reporting
TITANIUM DIOXIDE
Not listed.
BENZOYL PEROXIDE
1.0 %

CAA Accidental Release Prevention
TITANIUM DIOXIDE
Not listed.
BENZOYL PEROXIDE
Not listed.

FDA - Essential Chemical
None of the ingredients are listed or exempt.

FDA - Precursor Chemical
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
Acute

OSHA Highly Hazardous Chemicals
TITANIUM DIOXIDE
Not listed.
BENZOYL PEROXIDE
Threshold Quantity: 7500 lbs

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins
N,N-DIMETHYL-p-TOLUIDINE
Known to the State of California to cause cancer.

California Air Toxics "Hot Spots" (A-I)

BENZOYL PEROXIDE
ESTECM II PASTE A / B

California Directors List of Hazardous Substances

BENZOYL PEROXIDE

Massachusetts "Right To Know" List

TITANIUM DIOXIDE
BENZOYL PEROXIDE

Rhode Island "Right To Know" List

TITANIUM DIOXIDE
BENZOYL PEROXIDE

Minnesota "Right To Know" List

TITANIUM DIOXIDE
BENZOYL PEROXIDE

New Jersey "Right To Know" List

TITANIUM DIOXIDE
BENZOYL PEROXIDE

Pennsylvania "Right To Know" List

TITANIUM DIOXIDE
BENZOYL PEROXIDE

16. Other information

<table>
<thead>
<tr>
<th>Revision comments</th>
<th>§15. Regulatory information amended.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision date</td>
<td>4/10/2020</td>
</tr>
<tr>
<td>Revision</td>
<td>2</td>
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</tbody>
</table>
| Hazard statements in full | H315 Causes skin irritation.  
                          | H317 May cause an allergic skin reaction.  
                          | H319 Causes serious eye irritation.  |

The information which is contained in this document is based on available data. However, as such has been obtained from various sources, including independent laboratories, it is given without warranty or representation that is complete, accurate and can be replied upon. Tokuyama Dental Corp. has not attempted to conceal in any way the deleterious aspects of the product listed herein, but makes no warranty as to such information.