

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: coadmin@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 number: +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 - H 315: Eye Irrit . 2A - H319: Skin Sens. 1 - H317: Carc.2 - H351

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.
 H351 Suspected of causing cancer.

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

BISPHENOL A POLYETHOXY DIMETHACRYLATE CAS number: 41637-38-1	10-30%
TRIETHYLENE GLYCOL DIMETHACRYLATE CAS number: 109-16-0	10-30%
2-PROPENOIC ACID, 2-METHYL-, (1-METHYLETHYLIDENE)BIS[4,1-PHENYLENEOXY(2-HYDROXY-3,1-PROPANEDIYL)] ESTER CAS number: 1565-94-2	1-5%
TITANIUM DIOXIDE CAS number: 13463-67-7	<1%

ESTECEM II PASTE A / B

BENZOYL PEROXIDE CAS number: 94-36-0	<1%
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p-TOLYL DIETHANOLAMINE CAS number: 3077-12-1	<1%
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N,N-DIMETHYL-p-TOLUIDINE CAS number: 99-97-8	<1%
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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.
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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
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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.
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Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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6. Accidental release measures

ESTECEM 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 uses(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

Information on basic physical and chemical properties

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

10. Stability and reactivity

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

Stability Stable under the prescribed storage conditions.

ESTECEM 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

Information on toxicological effects

Routes of exposure Skin , Eyes , Ingestion , Inhalation , Health effects: See section 4.

Notes (oral LD₅₀) Not available.

Notes (dermal LD₅₀) Not available.

Notes (inhalation LC₅₀) Not available.

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Animal data Not available.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitization

Respiratory sensitization Not available.

Skin sensitization

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro Not available.

Genotoxicity - in vivo Not available.

Carcinogenicity

Carcinogenicity Not available.

IARC carcinogenicity Some of the ingredients are listed or exempt.

NTP carcinogenicity Some of the ingredients are listed or exempt.

OSHA Carcinogenicity None of the ingredients are listed.

Reproductive toxicity

Reproductive toxicity - fertility Not available.

Reproductive toxicity - development Not available.

Specific target organ toxicity - single exposure

STOT - single exposure Not available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not available.

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

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

Other adverse effects

Other adverse effects Not known.

ESTEC EM 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.

Regulatory References 29 CFR 1910. 1200(g) Federal Regulations (OSHA 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

TITANIUM DIOXIDE (air borne, unbound particles of respirable size)

Known to the State of California to cause cancer.

BENZOYL PEROXIDE

Not listed.

N,N-DIMETHYL-p-TOLUIDINE

Known to the State of California to cause cancer.

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

TITANIUM DIOXIDE

Not listed.

ESTECEM II PASTE A / B

BENZOYL PEROXIDE

Present.

California Directors List of Hazardous Substances

TITANIUM DIOXIDE

Not listed.

BENZOYL PEROXIDE

Present.

Massachusetts "Right To Know" List

TITANIUM DIOXIDE

Present.

BENZOYL PEROXIDE

Present.

Rhode Island "Right To Know" List

TITANIUM DIOXIDE

Present.

BENZOYL PEROXIDE

Present.

Minnesota "Right To Know" List

TITANIUM DIOXIDE

Present.

BENZOYL PEROXIDE

Present.

New Jersey "Right To Know" List

TITANIUM DIOXIDE

Present.

BENZOYL PEROXIDE

Present.

Pennsylvania "Right To Know" List

TITANIUM DIOXIDE

Present.

BENZOYL PEROXIDE

Present.

16. Other information

Revision comments

Revision date 3/7/2018

Revision 2

Hazard statements in full H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.

ESTECEM II PASTE A / B

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 relied 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.

SAFETY DATA SHEET
TOKUYAMA UNIVERSAL BOND BOND A

1. Identification

Product identifier

Product name TOKUYAMA UNIVERSAL BOND BOND A

Recommended use of the chemical and restrictions on use

Application Dental adhesive. 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: coadmin@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 number: +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 Flam. Liq. 2 - H225

Health hazards Skin Irrit. 2 - H315: Eye Irrit. 2A - H319: Skin Sens. 1 - H317: STOT SE 3 - H336

Environmental hazards Not Classified

Label elements

TOKUYAMA UNIVERSAL BOND BOND A

Pictogram



Signal word

Danger

Hazard statements

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

Precautionary statements

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P240 Ground/ bond container and receiving equipment.
P241 Use explosion-proof electrical equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing vapor/ spray.
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
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.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a poison center/ doctor if you feel unwell.
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.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P370+P378 In case of fire: Use alcohol resistant foam, carbon dioxide or dry powder to extinguish.
P501 Dispose of contents/ container in accordance with local regulations.

Contains

ACETONE, 2-PROPENOIC ACID, 2-METHYL-, (1-METHYLETHYLIDENE)BIS[4,1-PHENYLENEOXY(2-HYDROXY-3,1-PROPANEDIYL)] ESTER, 2-HYDROXYETHYL METHACRYLATE, TRIETHYLENE GLYCOL DIMETHACRYLATE

Other hazards

Hazards not otherwise classified (HNOC)

Not applicable.

3. Composition/information on Ingredients

Mixtures

ACETONE

30-60%

CAS number: 67-64-1

TOKUYAMA UNIVERSAL BOND BOND A

2-PROPENOIC ACID, 2-METHYL-, (1-METHYLETHYLIDENE)BIS[4,1-PHENYLENEOXY(2-HYDROXY-3,1-PROPANEDIYL)] ESTER CAS number: 1565-94-2	10-30%
2-HYDROXYETHYL METHACRYLATE CAS number: 868-77-9	10-30%
TRIETHYLENE GLYCOL DIMETHACRYLATE CAS number: 109-16-0	5-10%
METHACRYLOXYALKYL ACID PHOSPHATE (PHOSPHORIC ACID MONOMER) CAS number: 52628-03-2	1-5%
2,6-DI-<i>tert</i>-BUTYL-<i>p</i>-CRESOL CAS number: 128-37-0 M factor (Chronic) = 1	<1%

4. First-aid measures

Description of first aid measures

General information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.
Ingestion	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Never give anything by mouth to an unconscious person. Keep affected person under observation. Get medical attention.
Skin Contact	Wash skin thoroughly with soap and water. In the event of any sensitization symptoms developing, ensure further exposure is avoided. Get medical attention if symptoms are severe or persist after washing.
Eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	May cause drowsiness or dizziness.
Skin contact	Irritating to skin. May cause an allergic skin reaction. Repeated exposure may cause skin dryness or cracking.
Eye contact	Irritating to eyes.

Indication of immediate medical attention and special treatment needed

TOKUYAMA UNIVERSAL BOND BOND A

Notes for the doctor Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Highly flammable gases or vapors. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

Specific hazards Highly flammable liquid and vapour. Containers can burst violently or explode when heated, due to excessive pressure build-up. Vapors may be ignited by a spark, a hot surface or an ember. Vapors may form explosive mixtures with air. Fire-water run-off in sewers may create fire or explosion hazard.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Irritating gases or vapors. Carbon monoxide (CO). Carbon dioxide (CO₂).

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Evacuate area. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Promptly remove any clothing that becomes contaminated. Avoid inhalation of dust and vapors. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

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 Wear protective clothing as described in Section 8 of this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage. Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Do not allow material to enter confined spaces, due to the risk of explosion. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

TOKUYAMA UNIVERSAL BOND BOND A

7. Handling and storage

Precautions for safe handling

Usage precautions

Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Ground/bond container and receiving equipment. Take precautionary measures against static discharges. Avoid breathing gas, fume, vapours or spray. Handle all packages and containers carefully to minimize spills. Avoid the formation of mists. Keep container tightly sealed when not in use. Do not handle broken packages without protective equipment. Keep away from food, drink and animal feeding stuffs.

Advice on general occupational hygiene

Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage precautions

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed, in a cool, well ventilated place. Store locked up. Keep only in the original container. Protect containers from damage. Store away from the following materials: Oxidizing materials. Organic peroxides/hydroperoxides.

Specific end uses(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

ACETONE

Long-term exposure limit (8-hour TWA): ACGIH 250 ppm 594 mg/m³

Short-term exposure limit (15-minute): ACGIH 500 ppm 1187 mg/m³

A4

Long-term exposure limit (8-hour TWA): OSHA 1000 ppm 2400 mg/m³

2,6-DI-tert-BUTYL-p-CRESOL

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ inhalable fraction and vapor

A4

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

OSHA = Occupational Safety and Health Administration.

Exposure controls

Appropriate engineering controls

Provide adequate ventilation. Use explosion-proof electrical, ventilating and lighting equipment. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Wear tight-fitting, chemical splash goggles or face shield.

Hand protection

Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

TOKUYAMA UNIVERSAL BOND BOND A

Other skin and body protection	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Hygiene measures	Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product. Take off immediately all contaminated clothing and wash it before reuse.
Respiratory protection	Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Liquid
Color	Colorless ~ Yellow
Odor	Characteristic
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	>35°C
Flash point	-17.6°C
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.968
Solubility(ies)	No information available.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidizing properties	Not available.

10. Stability and reactivity

Reactivity	The following materials may react violently with the product: Oxidizing materials. Organic peroxides/hydroperoxides. See the other subsections of this section for further details.
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TOKUYAMA UNIVERSAL BOND BOND A

Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	The following materials may react strongly with the product: Oxidizing materials. Organic peroxides/hydroperoxides.
Conditions to avoid	Vapors may form explosive mixtures with air. Containers can burst violently or explode when heated, due to excessive pressure build-up. Static electricity and formation of sparks must be prevented.
Materials to avoid	Oxidizing materials. Organic peroxides/hydroperoxides.
Hazardous decomposition products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Irritating gases or vapors. Carbon monoxide (CO). Carbon dioxide (CO ₂).

11. Toxicological Information

Information on toxicological effects

Routes of exposure	Skin , Eyes , Ingestion , Inhalation , Health effects: See section 4.
<u>Acute toxicity - oral</u>	
Notes (oral LD₅₀)	Not available.
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	Not available.
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	Not available.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Skin Irrit. 2 - H315, Irritating to skin.
Animal data	Not available.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Eye Irrit. 2 - H319 Causes serious eye irritation.
<u>Respiratory sensitization</u>	
Respiratory sensitization	Not available.
<u>Skin sensitization</u>	
Skin sensitization	Skin Sens. 1 - H317 May cause an allergic skin reaction.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Not available.
<u>Carcinogenicity</u>	
Carcinogenicity	Not available.
IARC carcinogenicity	Some of the ingredients are listed or exempt. IARC Group 3 Not classifiable as to its carcinogenicity to humans.
NTP carcinogenicity	Some of the ingredients are listed or exempt.
OSHA Carcinogenicity	None of the ingredients are listed.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Not available.

TOKUYAMA UNIVERSAL BOND BOND A

Reproductive toxicity - development Not available.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 3 - H336 May cause drowsiness or dizziness.

Target organs Central nervous system

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard

Aspiration hazard Not available.

Toxicological information on ingredients.

SILICON DIOXIDE

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.

2,6-DI-tert-BUTYL-p-CRESOL

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.

12. Ecological Information

Toxicity

Toxicity No information available.

Acute toxicity - fish Not available.

Acute toxicity - aquatic invertebrates Not available.

Acute toxicity - aquatic plants Not available.

Persistence and degradability

Persistence and degradability The degradability of the product is not known.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient Not available.

Mobility in soil

Mobility Volatile liquid. The product contains organic solvents which will evaporate easily from all surfaces.

Results of PBT and vPvB assessment

TOKUYAMA UNIVERSAL BOND BOND A

Results of PBT and vPvB assessment

This product does not contain any substances classified as PBT or vPvB.

Other adverse effects

Other adverse effects

None known.

13. Disposal considerations

Waste treatment methods

General information

The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods

Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General

For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

UN Number

UN No. (IMDG) 1133

UN No. (ICAO) 1133

UN No. (DOT) UN1133

UN proper shipping name

Proper shipping name (IMDG) ADHESIVES

Proper shipping name (ICAO) ADHESIVES

Proper shipping name (DOT) ADHESIVES

Transport hazard class(es)

DOT hazard class 3

DOT hazard label 3

IMDG Class 3

ICAO class/division 3

Transport labels



DOT transport labels



TOKUYAMA UNIVERSAL BOND BOND A

Packing group

IMDG packing group II
ICAO packing group II
DOT packing group II

Environmental hazards

Environmentally Hazardous Substance

No.

Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-E, S-D

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

None of the ingredients are listed or exempt.

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

The following ingredients are listed or exempt:

ACETONE

Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

SARA 313 Emission Reporting

None of the ingredients are listed or exempt.

CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

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

Fire
Acute
Chronic

OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed or exempt.

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

The following ingredients are listed or exempt:

SILICON DIOXIDE

Present.

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

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

SILICON DIOXIDE

Present.

ACETONE

Present.

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

SILICON DIOXIDE

Present.

ACETONE

Present.

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

ACETONE

Present.

Minnesota "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

SILICON DIOXIDE

Present.

ACETONE

Present.

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

TOKUYAMA UNIVERSAL BOND BOND A

2,6-DI-tert-BUTYL-p-CRESOL

Present.

ACETONE

Present.

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

SILICON DIOXIDE

Present.

ACETONE

Present.

16. Other information

Revision comments	This is first issue.
Revision date	11/20/2016
Revision	1
Hazard statements in full	H225 Highly flammable liquid and vapor. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness.

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 relied 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.

SAFETY DATA SHEET
TOKUYAMA UNIVERSAL BOND BOND B

1. Identification

Product identifier

Product name TOKUYAMA UNIVERSAL BOND BOND B

Recommended use of the chemical and restrictions on use

Application Dental adhesive. 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: coadmin@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 number: +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 Flam. Liq. 2 - H225

Health hazards Skin Irrit. 2 - H315: Eye Irrit. 2A - H319: STOT SE 3 - H336

Environmental hazards Not Classified

Label elements

TOKUYAMA UNIVERSAL BOND BOND B

Pictogram



Signal word

Danger

Hazard statements

H225 Highly flammable liquid and vapor.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P240 Ground/ bond container and receiving equipment.
P241 Use explosion-proof electrical equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing vapor/ spray.
P264 Wash contaminated skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 If on skin: Wash with plenty of water.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a poison center/ doctor if you feel unwell.
P321 Specific treatment (see medical advice on this label).
P332+P313 If skin irritation 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.
P370+P378 In case of fire: Use alcohol resistant foam, carbon dioxide or dry powder to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with local regulations.

Contains

ACETONE, PROPAN-2-OL

Other hazards

Hazards not otherwise classified (HNOC)

Not applicable.

3. Composition/Information on Ingredients

Mixtures

ACETONE

60-100%

CAS number: 67-64-1

PROPAN-2-OL

10-30%

CAS number: 67-63-0

TOKUYAMA UNIVERSAL BOND BOND B

3-(TRIETHOXYSILYL)PROPYL METHACRYLATE CAS number: 21142-29-0	1-5%
1,1,3,3-TETRAMETHYLBUTYL HYDROPEROXIDE CAS number: 5809-08-5	1-5%
2,6-DI-tert-BUTYL-p-CRESOL CAS number: 128-37-0 M factor (Chronic) = 1	<1%

4. First-aid measures

Description of first aid measures

General Information	Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.
Ingestion	Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Never give anything by mouth to an unconscious person. Keep affected person under observation. Get medical attention.
Skin Contact	Wash skin thoroughly with soap and water. Get medical attention if symptoms are severe or persist after washing.
Eye contact	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.
Protection of first aiders	First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	May cause drowsiness or dizziness.
Skin contact	Irritating to skin. Prolonged contact may cause dryness of the skin.
Eye contact	Irritating to eyes.

Indication of immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Highly flammable liquid and vapour. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture

TOKUYAMA UNIVERSAL BOND BOND B

Specific hazards Highly flammable liquid and vapour. Containers can burst violently or explode when heated, due to excessive pressure build-up. Vapors may be ignited by a spark, a hot surface or an ember. Vapors may form explosive mixtures with air. Fire-water run-off in sewers may create fire or explosion hazard.

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Irritating gases or vapors. Carbon monoxide (CO). Carbon dioxide (CO₂).

Advice for firefighters

Protective actions during firefighting Avoid breathing fire gases or vapors. Evacuate area. Keep upwind to avoid inhalation of gases, vapors, fumes and smoke. Ventilate closed spaces before entering them. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Evacuate area. Provide adequate ventilation. No smoking, sparks, flames or other sources of ignition near spillage. Promptly remove any clothing that becomes contaminated. Avoid inhalation of dust and vapors. Use suitable respiratory protection if ventilation is inadequate. Avoid contact with skin and eyes.

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 Wear protective clothing as described in Section 8 of this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage. Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Do not allow material to enter confined spaces, due to the risk of explosion. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

TOKUYAMA UNIVERSAL BOND BOND B

Usage precautions Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Ground/bond container and receiving equipment. Take precautionary measures against static discharges. Avoid breathing gas, fume, vapours or spray. Handle all packages and containers carefully to minimize spills. Avoid the formation of mists. Keep container tightly sealed when not in use. Do not handle broken packages without protective equipment. Keep away from food, drink and animal feeding stuffs.

Advice on general occupational hygiene Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Storage precautions Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed, in a cool, well ventilated place. Store locked up. Keep only in the original container. Protect containers from damage. Store away from the following materials: Oxidizing materials. Organic peroxides/hydroperoxides.

Specific end uses(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

ACETONE

Long-term exposure limit (8-hour TWA): ACGIH 250 ppm 594 mg/m³

Short-term exposure limit (15-minute): ACGIH 500 ppm 1187 mg/m³

A4

Long-term exposure limit (8-hour TWA): OSHA 1000 ppm 2400 mg/m³

PROPAN-2-OL

Long-term exposure limit (8-hour TWA): OSHA 400 ppm 980 mg/m³

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 492 mg/m³

Short-term exposure limit (15-minute): ACGIH 400 ppm 984 mg/m³

A4

2,6-DI-tert-BUTYL-p-CRESOL

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ inhalable fraction and vapor

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 ventilation. Use explosion-proof electrical, ventilating and lighting equipment. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection Wear tight-fitting, chemical splash goggles or face shield.

TOKUYAMA UNIVERSAL BOND BOND B

Hand protection	Wear protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Hygiene measures	Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product. Take off immediately all contaminated clothing and wash it before reuse.
Respiratory protection	Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Liquid
Color	Blue
Odor	Characteristic
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	>35°C
Flash point	-14.6°C
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.834
Solubility(ies)	No information available.
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.

TOKUYAMA UNIVERSAL BOND BOND B

Oxidizing properties Not available.

Other information Not available.

10. Stability and reactivity

Reactivity	The following materials may react violently with the product: Oxidizing materials. Organic peroxides/hydroperoxides. See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	The following materials may react strongly with the product: Oxidizing materials. Organic peroxides/hydroperoxides.
Conditions to avoid	Vapors may form explosive mixtures with air. Containers can burst violently or explode when heated, due to excessive pressure build up. Static electricity and formation of sparks must be prevented.
Materials to avoid	Oxidizing materials. Organic peroxides/hydroperoxides.
Hazardous decomposition products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. Irritating gases or vapors. Carbon monoxide (CO). Carbon dioxide (CO ₂).

11. Toxicological information

Information on toxicological effects

Routes of exposure	Skin , Eyes , Ingestion , Inhalation , Health effects: See section 4.
Notes (oral LD₅₀)	Not available.
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	Not available.
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	Not available.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Skin Irrit. 2 - H315, Irritating to skin.
Animal data	Not available.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Eye Irrit. 2 - H319 Causes serious eye irritation.
<u>Respiratory sensitization</u>	
Respiratory sensitization	Not available.
<u>Skin sensitization</u>	
Skin sensitization	Not available.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Not available.
<u>Carcinogenicity</u>	
Carcinogenicity	Not available.

TOKUYAMA UNIVERSAL BOND BOND B

IARC carcinogenicity	Some of the ingredients are listed or exempt. IARC Group 3 Not classifiable as to its carcinogenicity to humans.
NTP carcinogenicity	Some of the ingredients are listed or exempt.
OSHA Carcinogenicity	None of the ingredients are listed.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Not available.
Reproductive toxicity - development	Not available.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	STOT SE 3 - H336 May cause drowsiness or dizziness.
Target organs	Central nervous system
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.
<u>Aspiration hazard</u>	
Aspiration hazard	Not available.
<u>Toxicological information on ingredients.</u>	

PROPAN-2-OL

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.

POLY(METHYL METHACRYLATE)

Carcinogenicity

IARC carcinogenicity	IARC Group 3 Not classifiable as to its carcinogenicity to humans.
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2,6-DI-tert-BUTYL-p-CRESOL

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.

12. Ecological Information

Toxicity

Toxicity No information available.

Acute toxicity - fish Not available.

Acute toxicity - aquatic invertebrates Not available.

Acute toxicity - aquatic plants Not available.

Persistence and degradability

TOKUYAMA UNIVERSAL BOND BOND B

Persistence and degradability The degradability of the product is not known.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient Not available.

Mobility in soil

Mobility Volatile liquid. The product contains organic solvents which will evaporate easily from all surfaces.

Results of PBT and vPvB assessment

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

Other adverse effects

Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

UN Number

UN No. (IMDG) 1133

UN No. (ICAO) 1133

UN No. (DOT) UN1133

UN proper shipping name

Proper shipping name (IMDG) ADHESIVES

Proper shipping name (ICAO) ADHESIVES

Proper shipping name (DOT) ADHESIVES

Transport hazard class(es)

DOT hazard class 3

DOT hazard label 3

IMDG Class 3

TOKUYAMA UNIVERSAL BOND BOND B

ICAO class/division 3

Transport labels



DOT transport labels



Packing group

IMDG packing group II

ICAO packing group II

DOT packing group II

Environmental hazards

Environmentally Hazardous Substance

No.

Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS F-E, S-D

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

None of the ingredients are listed or exempt.

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

The following ingredients are listed or exempt:

ACETONE

Final CERCLA RQ: 5000(2270) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

SARA 313 Emission Reporting

None of the ingredients are listed or exempt.

CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

TOKUYAMA UNIVERSAL BOND BOND B

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

Fire
Acute
Chronic

OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed or exempt.

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

The following ingredients are listed or exempt:

PROPAN-2-OL

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

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

ACETONE

Present.

PROPAN-2-OL

Present.

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

ACETONE

Present.

PROPAN-2-OL

Present.

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

ACETONE

Present.

PROPAN-2-OL

Present.

TOKUYAMA UNIVERSAL BOND BOND B

Minnesota "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

ACETONE

PROPAN-2-OL

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

ACETONE

Present.

PROPAN-2-OL

Present.

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

2,6-DI-tert-BUTYL-p-CRESOL

Present.

ACETONE

Present.

PROPAN-2-OL

Present.

16. Other information

Revision comments	This is first issue.
Revision date	11/20/2016
Revision	1
Hazard statements in full	H225 Highly flammable liquid and vapor. H315 Causes skin irritation. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness.

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