

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

Restriction on use 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: +1-760-942-7211
Fax: +1-760-942-7212

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 Tokuyama Dental America, Inc. Tel: +1-760-942-7211
Days and hours of operation : 9:00-17:00(PST/PDT), Weekdays, except national holidays in US.
Language: English only.

2. Hazard identification

Classification of the substance or mixture

WHMIS Regulatory Status This product has been classified according to the hazard criteria of the Hazardous Product Regulations and the SDS contains all required information.

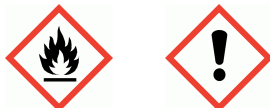
Physical hazards Flam. Liq. 2 - H225

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

Environmental hazards Not Classified

Label elements

Pictogram



Signal word Danger

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

TOKUYAMA UNIVERSAL BOND BOND A

Precautionary statements	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P240 Ground and bond container and receiving equipment.</p> <p>P241 Use explosion-proof electrical equipment.</p> <p>P242 Use non-sparking tools.</p> <p>P243 Take action to prevent static discharges.</p> <p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P312 Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P337+P313 If eye irritation persists: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P370+P378 In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with local regulations.</p>
---------------------------------	---

Contains	<p>2-PROPANONE, 2-PROPENOIC ACID, 2-METHYL-, (1-METHYLETHYLIDENE)BIS[4,1-PHENYLENEOXY(2-HYDROXY-3,1-PROPANEDIYL)] ESTER, 2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER, 2-PROPENOIC ACID, 2-METHYL-, 1,2-ETHANEDIYLBIS(OXY-2,1-ETHANEDIYL) ESTER</p>
-----------------	--

3. Composition/information on ingredients

Mixtures

2-PROPANONE CAS number: 67-64-1	30-60%
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-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER CAS number: 868-77-9	10-30%
2-PROPENOIC ACID, 2-METHYL-, 1,2-ETHANEDIYLBIS(OXY-2,1-ETHANEDIYL) ESTER CAS number: 109-16-0	5-10%

TOKUYAMA UNIVERSAL BOND BOND A

2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER, PHOSPHATE CAS number: 52628-03-2	1-5%
---	-------------

2,6-DI-t-BUTYL-4-METHYLPHENOL 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 any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
-----------------------------	------------------------

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Highly flammable gases or vapours. 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.

Specific hazards arising from the hazardous product

TOKUYAMA UNIVERSAL BOND BOND A

Specific hazards	Highly flammable liquid and vapour. Containers can burst violently or explode when heated, due to excessive pressure build-up. Vapours may be ignited by a spark, a hot surface or an ember. Vapours 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 vapours. Irritating gases or vapours. Carbon monoxide (CO). Carbon dioxide (CO ₂).
<u>Advice for firefighters</u>	
Protective actions during firefighting	Avoid breathing fire gases or vapours. Evacuate area. Keep upwind to avoid inhalation of gases, vapours, 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 vapours 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. Firefighter's clothing that provides a basic level of protection during chemical incidents is defined by the Canada Occupational Health and Safety Regulations, by provincial guidelines on occupational health and safety or by NFPA standards if applicable.

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 vapours. 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 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

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 A

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. 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 use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

2-PROPANONE

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

2,6-DI-t-BUTYL-4-METHYLPHENOL

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.

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 the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.9), and any relevant provincial regulation relating to health and safety at work. 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.

TOKUYAMA UNIVERSAL BOND BOND A

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 the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Full face mask respirators with replaceable filter cartridges should comply with the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work. Half mask and quarter mask respirators with replaceable filter cartridges should comply with the Canadian regulation on health and safety at work, SOR/86-304, Part XII (12.7), and any relevant provincial regulation relating to health and safety at work.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Liquid
Colour	Colourless ~ Yellow
Odour	Characteristic
Odour 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.
Vapour pressure	Not available.
Vapour 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.
Oxidising 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.

Stability

Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

TOKUYAMA UNIVERSAL BOND BOND A

Possibility of hazardous reactions	The following materials may react strongly with the product: Oxidizing materials. Organic peroxides/hydroperoxides.
Conditions to avoid	Vapours 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 vapours. Irritating gases or vapours. Carbon monoxide (CO). Carbon dioxide (CO ₂).

11. Toxicological information

Information on toxicological effects

UDF Phrase 1	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.
<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.

TOKUYAMA UNIVERSAL BOND BOND A

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

SILICA

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-t-BUTYL-4-METHYLPHENOL

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 No information available.

Acute aquatic toxicity

Acute toxicity - fish Not available.

Acute toxicity - aquatic invertebrates Not available.

Acute toxicity - aquatic plants Not available.

Ecological information on ingredients

2,6-DI-t-BUTYL-4-METHYLPHENOL

Chronic aquatic toxicity

M factor (chronic) 1

Persistence and degradability

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

Bioaccumulative potential

Bioaccumulative 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.

Other adverse effects

TOKUYAMA UNIVERSAL BOND BOND A

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. (TDG)	1133
UN No. (IMDG)	1133
UN No. (ICAO)	1133
UN No. (DOT)	UN1133

UN proper shipping name

Proper shipping name (TDG)	ADHESIVES, containing flammable liquid
Proper shipping name (IMDG)	ADHESIVES, containing flammable liquid
Proper shipping name (ICAO)	ADHESIVES, containing flammable liquid
Proper shipping name (DOT)	Adhesives, a containing flammable liquid

Transport hazard class(es)

DOT class	3
DOT hazard label	3
TDG class	3
TDG label(s)	3
IMDG class	3
ICAO class/division	3
DOT transport label	



TOKUYAMA UNIVERSAL BOND BOND A

Transport labels



Packing group

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

Environmental hazards

Environmentally hazardous substance/marine pollutant

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 References Hazardous Products Regulations - SOR/2015-17. Transportation of Dangerous Goods Regulations -SOR/2015-100.

16. Other information

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

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.