

Revision Date 08/05/2014

SAFETY DATA SHEET

TOKUYAMA SHIELD FORCE PLUS

1. IDENTIFICATION

Product Name	TOKUYAMA SHIELD FORCE PLUS
Identified uses	Protective sealant. For dental professionals only.
Supplier	Tokuyama Dental America Inc. Tel: (877) 378 3548 (Toll-Free)
Contact Person	http://www.tokuyama-dental.com/contact.htm
Manufacturer	Tokuyama Dental Corporation 38-9, Taitou 1-chome, Taitou-ku, Tokyo 110-0016, Japan TEL: +81-3-3835-2261
Emergency Telephone	Washington National Capital Poison Center 3201 New Mexico Avenue, Suite 310 Washington, DC 20016 Telephone: +1 202 362 3867 Emergency telephone: +1 800 222 1222 Fax: +1 202 362 8377 E-mail: pc@poison.org Web site: http://www.poison.org San Francisco California Poison Control System at San Francisco General Hospital University of California San Francisco, Box 1369 1001 Potrero Avenue, Bldg 5 Rm 2A21 San Francisco, California 94143-1369 Telephone: +1 415 643 3200 Emergency telephone: +1 800 222 1222 Fax: +1 415 502 6010 E-mail: coadmin@calpoison.org Web site: http://www.calpoison.org http://www.who.int/ipcs/poisons/centre/en/

2. HAZARD(S) IDENTIFICATION

Appearance	Liquid
Color	Light (or pale) yellow
Odor	Characteristic
GHS 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.
H361fd	Suspected of damaging fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements

P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
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P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing vapour/spray.
P305+351+338	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 or doctor/physician if you feel unwell.
P403+233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container in accordance with local regulations.

Contains

2-HYDROXYETHYL METHACRYLATE
 bisphenol A di(2-hydroxy propoxy) dimethacrylate
 diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
 PROPAN-2-OL
 triethylene glycol dimethacrylate

GHS Classification

Physical and Chemical Hazards	Flam. Liq. 2 - H225
Human health	Skin Irrit. 2 - H315; Eye Irrit. 2 - H319; Skin Sens. 1 - H317; Repr. 2 - H361fd; STOT SE 3 - H336
Environment	Aquatic Chronic 3 - H412

Hazard Not Otherwise Classified (HNOC)

Not applicable.

OSHA Regulatory Status

This Product is Hazardous under the OSHA Hazard Communication Standard.

General Information

May cause irritation to the respiratory system. Solvent vapors are hazardous and may cause nausea, sickness and headaches. Vapors may cause drowsiness and dizziness. IF SWALLOWED: Slightly irritating. (DIGESTIVE SYSTEM.) The liquid is irritating to eyes and skin. Product has a defatting effect on skin. May cause sensitization by skin contact.

3. COMPOSITION/INFORMATION ON INGREDIENTS

2-HYDROXYETHYL METHACRYLATE	10-30%
CAS No.: 868-77-9	EC No.: 212-782-2
GHS Classification Skin Irrit. 2 - H315; Eye Irrit. 2 - H319; Skin Sens. 1 - H317	
bisphenol A di(2-hydroxy propoxy) dimethacrylate	10-20%
CAS No.: 1565-94-2	EC No.: 216-367-7
GHS Classification Skin Sens. 1 - H317; Aquatic Chronic 3 - H412	
camphorquinone	< 1%
CAS No.: 10373-78-1	EC No.: 233-814-1
GHS Classification Not classified.	

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dibutyl hydroxy toluene	< 1%
CAS No.: 128-37-0	EC No.: 204-881-4
GHS Classification Aquatic Chronic 1 - H410	
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	< 1%
CAS No.: 75980-60-8	EC No.: 278-355-8
GHS Classification Repr. 2 - H361f	
MEQUINOL	< 1%
CAS No.: 150-76-5	EC No.: 205-769-8
GHS Classification Acute Tox. 4 - H302; Eye Irrit. 2 - H319; Skin Sens. 1 - H317	
methacryloxyalkyl acid phosphate (phosphoric acid monomer)	10-30%
CAS No.: 52628-03-2	EC No.: 258-053-2
GHS Classification Skin Irrit. 2 - H315; Eye Irrit. 2 - H319	
PROPAN-2-OL	30-60%
CAS No.: 67-63-0	EC No.: 200-661-7
GHS Classification Flam. Liq. 2 - H225; Eye Irrit. 2 - H319; STOT SE 3 - H336	
triethylene glycol dimethacrylate	5-10%
CAS No.: 109-16-0	EC No.: 203-652-6
GHS Classification Skin Irrit. 2 - H315; Eye Irrit. 2 - H319; Skin Sens. 1 - H317	

4. FIRST-AID MEASURES

Description of first aid measures

General Information

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

Inhalation

Move the exposed person to fresh air at once.

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Ingestion

Immediately rinse mouth and drink plenty of water (200-300 ml). Get medical attention if any discomfort continues.

Skin Contact

Wash the skin immediately with soap and water.

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. Contact physician if irritation persists.

Most important symptoms and effects, both acute and delayed

Inhalation

Irritating to respiratory system. Vapors may cause drowsiness and dizziness.

Ingestion

Slightly irritating. (DIGESTIVE SYSTEM.)

Skin Contact

Irritating to skin. Product has a defatting effect on skin. May cause sensitization by skin contact.

Eye Contact

Irritating and may cause redness and pain.

Indication of any immediate medical attention and special treatment needed

Notes To The Physician

CAUTION! First aid personnel must be aware of own risk during rescue! Wear suitable protective clothing.

5. FIRE-FIGHTING MEASURES

Auto Ignition Temperature (°C)

Not available.

Flammability Limit - Lower(%)

Not available.

Flammability Limit - Upper(%)

Not available.

Flash point (°C) 20.0 °C

Extinguishing Media

Fire can be extinguished using: Foam. Carbon dioxide or dry powder.

Specific Hazards

When heated and in case of fire, irritating vapors/gases may be formed.

Special Fire Fighting Procedures

Avoid breathing fire vapors.

Protective Equipment For Fire-Fighters

Wear full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Wear protective clothing as described in Section 8 of this material safety data sheet.

Environmental Precautions

Do not discharge into drains, water courses or onto the ground.

Spill Clean Up Methods

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Absorb in vermiculite, dry sand or earth and place into containers. Do not contaminate water sources or sewer.

Reference to other sections

For personal protection, see section 8.

7. HANDLING AND STORAGE

Handling

Do not handle until all safety precautions have been read and understood. All handling to take place in well-ventilated area.

Storage

Store under refrigerated conditions at temperatures between 0 to 10°C (32 to 50°F). Keep away from heat, direct sunlight, sparks and open flames.

Storage Class

Flammable liquid storage.

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Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT	STD	TWA (8-hrs)		STEL (15 min)		Notes
dibutyl hydroxy toluene	ACGIH		2 mg/m ³			A4
PROPAN-2-OL	ACGIH	200 ppm		400 ppm		A4
PROPAN-2-OL	PEL	400 ppm	980 mg/m ³			

COMPONENT	IDLH
PROPAN-2-OL	2000 ppm

ACGIH=American Conference of Governmental Industrial Hygienists.

A4: Not Classifiable as a Human Carcinogen.

Protective Equipment



Engineering Measures

Provide adequate general and local exhaust ventilation.

Respiratory Equipment

In case of inadequate ventilation use suitable respirator.

Hand Protection

Wear protective gloves.

Eye Protection

Wear approved safety goggles.

Other Protection

Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene Measures

DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap & water if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Color	Light (or pale) yellow
Odor	Characteristic
Solubility	No information available.
Initial boiling point and boiling range	Not available.
Melting point (°C)	Not available.
Relative density	1.00
Vapor density (air=1)	Not available.
Vapor pressure	Not available.
Evaporation rate	Not available.
pH-Value, Conc. Solution	Not available.
pH-Value, Diluted Solution	2.0

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Viscosity

Not available.

Decomposition temperature (°C)

Not available.

Odour Threshold, Lower

Not available.

Odour Threshold, Upper

Not available.

Flash point 20.0 °C

Auto Ignition Temperature (°C)

Not available.

Flammability Limit - Lower(%)

Not available.

Flammability Limit - Upper(%)

Not available.

Partition Coefficient

(N-Octanol/Water)

Not available.

Explosive properties

Not available.

Other Flammability

Not available.

Oxidising properties

Not available.

10. STABILITY AND REACTIVITY

Reactivity

No information available.

Stability

HIGHLY FLAMMABLE!

Hazardous reactions:

Not available.

Conditions To Avoid

Keep away from heat, sparks and open flame. Protect against direct sunlight.

Materials To Avoid

Strong oxidizing agents.

Hazardous Decomposition Products

Toxic gases are generated when heated.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Not available.

Skin Corrosion/Irritation:

Irritating to skin. Product has a defatting effect on skin.

Serious eye damage/irritation:

Irritating and may cause redness and pain.

Respiratory or skin sensitisation:

Respiratory sensitisation

Not available.

Skin sensitisation

May cause sensitization by skin contact.

Germ cell mutagenicity:

Not available.

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Carcinogenicity:

IARC Carcinogenicity

Butylated hydroxytoluene (BHT) , PROPAN-2-OL : IARC Group 3 Not classifiable as to its carcinogenicity to humans.

NTP - Carcinogenicity

Not listed.

OSHA - Carcinogenicity

Not listed.

Reproductive Toxicity:

No information available.

Specific target organ toxicity - single exposure:

May cause irritation to the respiratory system. Vapors may cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure:

STOT - Repeated exposure

Not available.

Aspiration hazard:

Viscosity

Not available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product contains a substance which is harmful to aquatic organisms and which may cause long term adverse effects in the aquatic environment.

Toxicity

No data available.

Degradability

No data available.

Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient

Not available.

Mobility:

No information available.

Results of PBT and vPvB assessment

This product does not contain any PBT or vPvB Substances.

Other adverse effects

Not known.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of waste and residues in accordance with local authority requirements.

14. TRANSPORT INFORMATION

UN No. (DOT/TDG)	1133
UN No. (IMDG)	1133
UN No. (ICAO)	1133
DOT Proper Shipping Name	ADHESIVES, CONTAINING A FLAMMABLE LIQUID
TDG Proper Shipping Name	ADHESIVES, CONTAINING A FLAMMABLE LIQUID
DOT Hazard Class	3
DOT Hazard Label	Flammable Liquid

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TDG Class	3
TDG Label(s)	3
IMDG Class	3
ICAO Class	3

Transport Labels



DOT Pack Group	II
IMDG Pack Group	II
Air Pack Group	II

Environmentally Hazardous Substance/Marine Pollutant

No.

EMS F-E, S-D

Special precautions for user Not available.

Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code Notes

Not applicable.

15. REGULATORY INFORMATION

Regulatory Status (US)

This Product is Hazardous under the OSHA Hazard Communication Standard.

Regulatory References

29 CFR 1910. 1200(g) Federal Regulations (OSHA Standard).

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed.

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

None of the ingredients are listed.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed.

SARA 313 Emission Reporting

The following ingredients are listed.

PROPAN-2-OL

CAA Accidental Release Prevention

None of the ingredients are listed.

SARA (311/312) Hazard Categories

Fire Acute Chronic

OSHA Highly Hazardous Chemicals

None of the ingredients are listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed.

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

The following ingredients are listed.

PROPAN-2-OL

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

None of the ingredients are listed.

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Massachusetts "Right To Know" List

The following ingredients are listed.

dibutyl hydroxy toluene

MEQUINOL

PROPAN-2-OL

Rhode Island "Right To Know" List

The following ingredients are listed.

dibutyl hydroxy toluene

MEQUINOL

PROPAN-2-OL

Minnesota "Right To Know" List

The following ingredients are listed.

dibutyl hydroxy toluene

MEQUINOL

PROPAN-2-OL

New Jersey "Right To Know" List

The following ingredients are listed.

dibutyl hydroxy toluene

MEQUINOL

PROPAN-2-OL

Pennsylvania "Right To Know" List

The following ingredients are listed.

dibutyl hydroxy toluene

MEQUINOL

PROPAN-2-OL

International Inventories

EU - EINECS/ELINCS

All ingredients are listed or exempt.

Canada – DSL/NDSL

All ingredients are listed or exempt.

US - TSCA

All ingredients are listed or exempt.

US – TSCA 12(b) Export Notification

None of the ingredients are listed.

16. OTHER INFORMATION

Revision Comments

This is first issue.

Revision Date

08/05/2014

Disclaimer

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.