

SAFETY DATA SHEETS

This SDS packet was issued with item:

076362404

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

076362446

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

076362420

SAFETY DATA SHEET

1. Identification of the substance or mixture and of the supplier

1.1 Product Name:

HY-Bond Zinc Phosphate Cement "LIQUID "

1.2 Company /Undertaking identification

Manufacturer's Name: **SHOFU INC.**

Address: 11 Kamitakamatsu-cho, Fukuine, Higashiyama-ku, Kyoto 605-0983 ,JAPAN

Phone: +81-75-561-1112

Fax: +81-75-561-2273

Section in Charge: Quality Assurance Section

Date Prepared: 2014.9.25

1.3 Emergency Telephone Number

+81-75-561-1112

2. Hazards identification

GHS CLASSIFICATION

PHYSICAL HAZARDS	SELF-REACTIVE SUBSTANCES AND MIXTURES	Not Classified
	SUBSTANCES AND MIXTURES WHICH,IN CONTACT WITH WATER,EMIT FLAMMABLE GASAS	Not Classified
HEALTH HAZARDS	ACUTE TOXICITY-ORAL	Category 4
	ACUTE TOXICITY-DERMAL	Not Classified
	ACUTE TOXICITY-INHALATION(DUST)	Not Classified
	ACUTE TOXICITY-INHALATION(MIST)	Not Classified
	SKIN CORROSION/IRRITATION	Category 1A
	EYE DAMAGE/IRRITATION	Category 1
	SENSITIZATION-SKIN	Not Classified
	CARCINOGENICITY	Not Classified
	TOXIC TO REPRODUCTION	Not Classified
	SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE)	Category 2 (systemic toxicity) Category 3 (respiratory tract irritation)
	SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE)	division 2(lung)
ENVIRONMENTAL HAZARD	HAZARDOUS TO THE AQUATIC ENVIRONMENT-ACUTE HAZARD	Category 2
	HAZARDOUS TO THE AQUATIC ENVIRONMENT-CHRONIC HAZARD	Category 2

The thing without mention is out of a classification object. Or cannot classify it.

LABEL ELEMENTS

SYMBOL



SIGNAL WORD

HAZARD STATEMENTS

Danger
Harmful if swallowed
Causes severe skin burns and eye damage
Causes serious eye damage

SAFETY DATA SHEET

May cause respiratory irritation
 Causes damage to organs(systemic toxicity)
 Causes damage to organs through prolonged or repeated exposure(lung)
 Toxic to aquatic life
 Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS

[Prevention]

Obtain special instruction before use.
 Do not handle until all safety precautions have been read and understood.
 Wear protective gloves and eye/face protection.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 Do not eat,drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Keep container tightly closed.
 Wash hands thoroughly after handling.
 Avoid release to the environment.

[Response]

If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing.
 If you feel un-well, get medical advice/attention.
 Take off immediately contaminated clothing.
 Wash contaminated clothing before reuse.
 Collect spillage.
 If in eyes, rinse cautiously with water for several minutes.
 Remove contact lenses, if present and easy to do.
 If eye irritation persists, get medical advice/attention.
 If swallowed, rinse mouth. Get medical advice/attention.

[Storage]

Store in a cool and dark area.

[Disposal]

Dispose of contents and container in accordance with regulation.

3.Composition/information on ingredients

<i>Composition</i>		<i>Hazard type</i>
Phosphoric acid [Cas No.7664-38-2]	≐ 55 %	C
Aluminium hydroxide	≐ 10 %	
Zinc oxide	< 5 %	
Water	> 30 %	

4.First-aid measures

- 4.1 Eye contact :** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.
- 4.2 Skin contact :** Wash immediately with soap and plenty of water. If on skin, skin irritation, get medical advice/attention.
- 4.3 Ingestion :** Rinse mouth. Get medical advice/attention.
- 4.4 Inhalation :** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptom concerning breath goes out, call a POISON CENTER to doctor.

SAFETY DATA SHEET

5.Fire-fighting measures

This product is non-flammable.

5.1 Suitable Extinguishing Media:	N/A
5.2 Extinguishing Media Should not be used :	N/A
5.3 Special Exposure Hazards Arising:	N/A
5.4 Special Protective Equipment:	N/A

6.Accidental release measures

6.1 Personal Precautions:	See section 8. Avoid contact with eyes and skin.
6.2 Environmental Precautions:	Send to approved treatment/disposal company or dispose according to local, state and federal regulations.
6.3 Methods for Cleaning Up:	Wipe up and discard in a suitable container.

7.Handling and storage

7.1 Handling:	Avoid contact with skin and eyes. Avoid inhaling and contact with eyes and skin. Local dust extraction measures are recommended.
7.2 Storage:	Store under normal dry conditions. Keep containers closed. Keep out of reach of children.

8.Exposure controls/personal protection

8.1 Exposure limits:	ACGIH TLV. Phosphoric acid 1mg/m ³ (TWA)
8.2 Respiratory Protection:	Local exhaust
8.3 Hand Protection:	Latex or rubber gloves
8.4 Eye Protection:	Safety goggles or eye protection.
8.5 Skin Protection:	Not required. General protective overalls.

9.Physical and chemical properties

9.1 Appearance/Odour/pH	Odourless, color less liquid
9.2 Boiling Point/Boiling Range:	N/D
9.3 Melting Point/Melting Range:	N/D
9.4 Flash point:	N/D
9.5 Auto flammability:	N/D
9.6 Explosive Properties:	N/D
9.7 Oxidizing Properties:	N/D
9.8 Vapour Pressure:	N/D
9.9 Relative Density:	1.59
9.10 Solubility: water solubility	Soluble
9.11 pH:	1~3 (as a 2% solution)

10.Stability and reactivity

10.1 Stability:	Stable under recommended storage conditions.
10.2 Reactivity:	N/A
10.3 Condition to avoid:	Avoid direct sunlight and high temperature.
10.4 Materials to avoid:	N/A

11.Toxicological information

Phosphoric acid

SAFETY DATA SHEET

Oral	rat	LD50 1250 mg/kg
	rabbit	LD50 2740 mg/kg
Zinc oxide Oral	rat	LD50 >5000 mg/kg
Inhalation (Dust,Mist)		
	rat	LC50 >5.7 mg/L

12. Ecological information

The product should not be allowed to drain into sewers.

13. Disposal considerations

Dispose of contents/container to in accordance with local/regional/national/international regulations.

14. Transport information

UN/ID No. 1805, (Haz Class 8 -Pack Group III) as Phosphoric acid, solution

15. Regulatory information

Follow all regulations in your country.

16. Other information

This product is intended for use by dental professionals. (instrument/material)



SAFETY DATA SHEET

SECTION 1. Identification of the substance or mixture and of the supplier

- 1.1 Product identifier
Trade Name:
HY-Bond Zinc Phosphate Cement "LIQUID"
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: Dental material
Uses advised against: No further data
- 1.3 Details of the supplier of the safety data sheet
Company/Undertaking identification
Manufacturer's Name: **SHOFU DENTAL CORPORATION**
Address: 1225 Stone Drive, San Marcos, CA 92078 USA
Toll Free: 1-800-827-4638
Phone: 760-736-3277
Fax: 760-736-3276
E-Mail: customer-service@shofu.com
Section in Charge: Quality Management & Regulatory Affairs
- 1.4 Emergency Telephone Number
For emergencies only. Call CHEMTREC: +1 703-741-5970 / 1-800-424-9300 (24 hours)

SECTION 2. Hazards identification

- 2.1 GHS Classification
HEALTH HAZARDS

ACUTE TOXICITY-ORAL	Category 4
SKIN CORROSION/IRRITATION	Category 1A
EYE DAMAGE/IRRITATION	Category 1
SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE)	Category 2 (systemic toxicity) Category 3 (respiratory tract irritation)
SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE)	Category 2 (lung)

 ENVIRONMENTAL HAZARD

HAZARDOUS TO THE AQUATIC ENVIRONMENT-ACUTE HAZARD	Category 2
HAZARDOUS TO THE AQUATIC ENVIRONMENT-CHRONIC HAZARD	Category 2

The thing without mention is out of a classification object. Or cannot classify it.

- 2.2 Label elements
SYMBOL



GHS05 GHS07 GHS08 GHS09



SAFETY DATA SHEET

page 2/7
HY-Bond Zinc Phosphate Cement
LIQUID
Printing date: August 26, 2019

SIGNAL WORD Danger

HAZARD STATEMENTS

- Harmful if swallowed
- Causes severe skin burns and eye damage
- May cause respiratory irritation
- May cause damage to organs (systemic toxicity)
- May cause damage to organs through prolonged or repeated exposure (lung)
- Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS

[Prevention]

- Obtain special instruction before use.
 - Do not handle until all safety precautions have been read and understood.
 - Avoid breathing dust/fume/gas/mist/vapours/spray.
 - Wash hands thoroughly after handling.
 - Do not eat, drink or smoke when using this product.
 - Use only outdoors or in a well-ventilated area.
 - Avoid release to the environment.
 - Wear protective gloves/protective clothing/eye protection/face protection.
- [Response]
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 - IF ON SKIN or hair: Take off immediately all contaminated clothing. Rinse skin with water or shower.
 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - Get medical advice/attention if you feel unwell.
 - Collect spillage.
- [Storage]
- Store in a cool and dark area.
- [Disposal]
- Dispose of contents and container in accordance with regulation.

2.3 Other hazards

- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3. Composition/information on ingredients

- 3.1 Chemical characterization: Mixtures
- 3.2 Description: Mixture of substances listed below with nonhazardous additions.
- 3.3 Dangerous components:

Phosphoric acid [Cas No.7664-38-2]	50-60 %
Zinc oxide [Cas No.1314-13-2]	1-5 %

Version Number 9
Revision date: August 9, 2019



SAFETY DATA SHEET

page 3/7
HY-Bond Zinc Phosphate Cement
LIQUID
Printing date: August 26, 2019

Other components:

Aluminum hydroxide	1-10 %
Water	30-35 %

3.4 Additional information: For the wording of the listed risk phrases refer to section 2

SECTION 4. First-aid measures

4.1 Description of first aid measures

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical advice/attention.

Skin contact: Wash immediately with soap and plenty of water. If on skin, skin irritation, get medical advice/attention.

Ingestion: Rinse mouth and seek medical advice if necessary.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptom concerning breath goes out, call a POISON CENTER or doctor.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5. Fire-fighting measures

5.1 Extinguishing Media:

Foam, CO₂, Powder, Dry sand

5.2 Special hazards arising from the substance or mixture:

In case of fire, irritation gases and fumes may emit.

5.3 Advice for firefighters:

Wear fire protective cloth and self-contained breathing apparatus, if necessary.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Avoid contact with eyes and skin.

6.2 Environmental Precautions:

Send to approved treatment/disposal company or dispose according to local, state and federal regulations.

6.3 Methods and material for containment and cleaning Up:

Wipe up and discard in a suitable container.

6.4 Reference to other section:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7. Handling and storage

7.1 Precautions for safe handling:

Avoid inhaling and contact with eyes and skin.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool and dry place out of direct sunlight.

Keep containers closed.

Version Number 9
Revision date: August 9, 2019



SAFETY DATA SHEET

page 4/7
HY-Bond Zinc Phosphate Cement
LIQUID
Printing date: August 26, 2019

7.3 Specific end use(s):
No further relevant information available.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters:

Exposure limits	Phosphoric acid; [ACGIH 2014]	TLV-TWA	1 mg/m ³
		TLV-STEL	3 mg/m ³
	Zinc Oxide; [ACGIH 2013]	TLV-TWA	2 mg/m ³ (R)
		TLV-STEL	10 mg/m ³ (R)

8.2 Exposure controls:

Respiratory Protection:

Dust mask

Skin Protection:

Hand Protection

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Butyl rubber, BR
Nitrile rubber, NBR

Eye Protection: Safety goggles

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance/Odor/Colour:	Odourless, color less liquid
Odour threshold	Not determined.
pH	1-3 (as a 2% solution)
Melting point/freezing point	Not determined.
Boiling Point:	Not determined.
Flash point:	Not determined.
Evaporation rate	Not determined.

Version Number 9
Revision date: August 9, 2019



SAFETY DATA SHEET

page 5/7
HY-Bond Zinc Phosphate Cement
LIQUID
Printing date: August 26, 2019

Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not determined.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative Density:	1.59 (water=1)
Solubility: water solubility	Soluble.
Partition coefficient: n-octanol/water	Not determined.
Auto-ignition temperature	Not determined.
Decomposition temperature	Not determined.
Viscosity	Not determined.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.

9.2 Other information

No further relevant information available.

SECTION 10. Stability and reactivity

10.1 Reactivity:

No further relevant information available.

10.2 Chemical stability:

Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions:

No dangerous reactions known.

10.4 Condition to Avoid:

Avoid direct sunlight and high temperature.

10.5 Incompatible materials:

No further relevant information available.

10.6 Hazardous Decomposition Products:

None under normal conditions of storage and use.

SECTION 11. Toxicological information

11.1 Information on toxicological effects:

Acute toxicity:

Acute Tox. 4; H302 Harmful if swallowed.

Phosphoric acid;

Oral	rat	LD50	1250 mg/kg
Dermal	rabbit	LD50	2740 mg/kg
Inhalation	rat	LC50	> 0.85 mg/L (4H)

Zinc oxide;

Oral	rat	LD50	> 5000 mg/kg
Dermal	rabbit	LD50	> 5000 mg/kg
Inhalation (dust)	rat	LC50	> 5.7 mg/L

Skin corrosion/irritation: Skin Corr. 1A ; H314 Causes severe skin burns and eye damage.

Eye damage/irritation: Eye Dam. 1; H314 Causes severe skin burns and eye damage.

Sensitization to the respiratory tract:

Based on available data, the classification criteria are not met.

Skin sensitization:

Based on available data, the classification criteria are not met.

Version Number 9

Revision date: August 9, 2019



SAFETY DATA SHEET

page 6/7
HY-Bond Zinc Phosphate Cement
LIQUID
Printing date: August 26, 2019

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure):
STOT SE 2; H371 May cause damage to organs (systemic toxicity).
STOT SE 3; H335 May cause respiratory irritation.

Specific target organ toxicity (repeated exposure):
STOT RE 3; H373 May cause damage to organs through prolonged or repeated exposure (lung).

Aspiration hazard: Based on available data, the classification criteria are not met.

SECTION 12. Ecological information

- 12.1 Toxicity:
No further relevant information available.
- 12.2 Persistence and degradability:
No further relevant information available.
- 12.3 Bioaccumulative potential:
No further relevant information available.
- 12.4 Mobility in soil:
No further relevant information available.
- 12.5 Results of PBT and vPvB assessment:
Not applicable.
- 12.6 Other adverse effects:
No further relevant information available.

SECTION 13. Disposal considerations

- 13.1 Waste treatment methods:
Dispose of contents/container to in accordance with local/regional/national/international regulations.

SECTION 14. Transport information

- 14.1 UN number: 1805
- 14.2 UN proper shipping name: Phosphoric acid, solution
- 14.3 Transport hazard class(es): 8 Corrosive substances.
- 14.4 Packing group: III
- 14.5 Environmental hazards: No
- 14.6 Special precautions for user: Not applicable.
- 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:
Not applicable.

SECTION 15. Regulatory information

Follow all regulations in your country.

Version Number 9
Revision date: August 9, 2019



SAFETY DATA SHEET

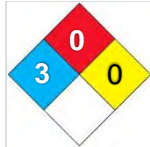
page 7/7
HY-Bond Zinc Phosphate Cement
LIQUID
Printing date: August 26, 2019

SECTION 16. Other information

This product is intended for use by dental professionals. (instrument/material)

NFPA ratings for USA (scale 0-4)

Phosphoric acid;



Health = 3
Fire = 0
Reactivity = 0

Relevant HMIS-Ratings (Scale 0-4)

Phosphoric acid;

Health Hazard	3
Fire Hazard	0
Reactivity	0

Health = 3
Fire = 0
Reactivity = 0

Relevant phrases:

- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H335 May cause respiratory irritation.
- H371 May cause damage to organs (systemic toxicity).
- H373 May cause damage to organs through prolonged or repeated exposure (lung).
- H411 Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms:

- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative