



SAFETY DATA SHEET

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HY-Bond Zinc Phosphate Cement
LIQUID
Printing date: August 3, 2017

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 INC.**

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

Phone: +81-75-561-1112

Fax: +81-75-275-4795

Section in Charge: Quality Assurance Section

1.4 Emergency Telephone Number

+81-75-561-1112

SECTION 2. Hazards identification

2.1 GHS Classification

PHYSICAL HAZARDS

FLAMMABLE LIQUIDS	Not Classified
PYROPHORIC LIQUIDS	Not Classified
SELF-REACTIVE SUBSTANCES AND MIXTURES	Not Classified
SUBSTANCES AND MIXTURES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASAS	Not Classified
OXIDIZING LIQUIDS	Not Classified

HEALTH HAZARDS

ACUTE TOXICITY-ORAL	Category 4
ACUTE TOXICITY-DERMAL	Not Classified
SKIN CORROSION/IRRITATION	Category 1A
EYE DAMAGE/IRRITATION	Category 1
SENSITIZATION-SKIN	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)	Category 2 (lung)

ENVIRONMENTAL HAZARD

HAZARDOUS TO THE AQUATIC ENVIRONMENT-ACUTE HAZARD	Category 2
HAZARDOUS TO THE AQUATIC ENVIRONMENT-CHRONIC HAZARD	Category 3

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



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2.2 Label elements SYMBOL



GHS07 GHS05 GHS08

SIGNAL WORD Danger

HAZARD STATEMENTS

- Harmful if swallowed.
- Causes severe skin burns and eye damage.
- Causes serious eye damage.
- May cause respiratory irritation.
- May cause damage to organs. (systemic toxicity)
- May cause damage to organs through prolonged or repeated exposure. (lung)

PRECAUTIONARY STATEMENTS

[Prevention]

- Obtain special instruction before use.
- Do not handle until all safety precautions have been read and understood.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Do not eat, drink or smoke when using this product.
- Avoid release to the environment.
- Wash hand thoroughly after handling.

[Response]

- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Get medical advice/attention if you feel unwell.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

[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.



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- 3.3 Dangerous components:
- | | |
|------------------------------------|---------|
| Phosphoric acid [Cas No.7664-38-2] | 50-60 % |
| Aluminium hydroxide | 1-10 % |
| Zinc oxide | 1-5 % |
| 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:
Powder, Alcohol-resistant foam, Carbon dioxide.
- 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.



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7.2 Conditions for safe storage, including any incompatibilities:

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

Keep containers closed.

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 2004]	TLV: 1 mg/m ³ (TWA), 3 mg/m ³ (STEL)
NIOSH REL:	TWA 1 mg/m ³ , ST 3 mg/kg
OSHA PEL:	TWA 1 mg/m ³
[DFG 2005]	MAK: (Inhalable fraction) 2 mg/m ³
Zinc Oxide;	
[ACGIH]	TLV: 2 mg/m ³ (TWA)

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)



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Melting point/freezing point	Not determined.
Boiling Point:	Not determined.
Flash point:	Not determined.
Evaporation rate	Not determined.
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: | H302 Harmful if swallowed. |
| | Phosphoric acid; |
| | Oral rat LD50 1530 mg/kg |
| | Dermal rabbit LD50 2740 mg/kg |
| | Zinc oxide; |
| | Oral rat LD50 > 5000 mg/kg |
| | Inhalation (dust) rat LC50 > 5.7 mg/kg |
- Skin corrosion/irritation: H314 Causes severe skin burns and eye damage.
Eye damage/irritation: H318 Causes serious eye damage.
Sensitization to the respiratory tract:
Based on available data, the classification criteria are not met.



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Skin sensitization: Based on available data, the classification criteria are not met.
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):
H335 May cause respiratory irritation.
H371 May cause damage to organs. (systemic toxicity)
Specific target organ toxicity (repeated exposure):
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 informati

Follow all regulations in your country.



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SECTION 16. Other information

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

Relevant phrases:

- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious 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)
- H401 Toxic to aquatic life.
- H412 Harmful 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