

Material Safety Data Sheet

1. PRODUCT AND COMPANY INFORMATION

Product name : Tricalcium phosphate (TCP)

Company : InoBone Co., Ltd

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Sinchang-myeon, Asan-city, Chungcheongnam-do, Republic of Korea

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Recommended use of the chemical and restrictions on use

Recommended use : Dental or orthopedic artificial bone and bone grafting material /
Toothpaste raw material / Cosmetic material / Implant coating material

Restrictions on use : No data available

2. HAZARDS IDENTIFICATION

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Physical hazard : Not applicable

Health hazard : Not applicable

Environment hazard : Not applicable

Label elements including precautionary statements

Symbol : Not applicable

Signal word : Not applicable

Hazard statements : Not applicable

Precautionary statements : Not applicable

NFPA Rating

Health : 0

Flammability : 0

Reactivity : 0

Water reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No.	EINECS No.	Wt. %
Tricalcium phosphate	7758-87-4	231-840-8	≥ 95 %

4. FIRST AID MEASURES

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

In case of skin contact

No data available

If inhaled

If not breathing, give artificial respiration.

If swallowed

Never give anything by mouth to an unconscious person.

Other medical attention.

Medical personnel should be aware of the protective measures of the substance.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point : No flash occurred under 110 °C (Rapid equilibrium method)

Autoignition temperature : No spontaneous combustion under 300 °C

Burning rate : Did not ignite. (UN TDG test & criteria - Test N1)

Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical, carbon dioxide

Specific hazards arising from the chemical

No data available

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Ensure adequate ventilation.

Environmental precautions

No data available

Methods and materials for containment and cleaning up

Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Components with workplace control parameter

KOSHA : No data available

US ACGIH : No data available

Appropriate engineering controls : No data available

Personal protective equipment

Respiratory protection : Dust mask

Hand protection : Protective gloves

Eye protection : Protective goggles

Skin and body protection : General working clothes

9. PHYSICAL AND CHEMICAL PROPERTIES

State : Solid at 20 °C

Appearance form : Powder

pH : 7.0 ~ 8.0 ※ Product : H₂O = 1:5 (V/V)

Flash point : No flash occurred under 110 °C. (Rapid equilibrium method)

Autoignition temperature : No spontaneous combustion under 300 °C

Water solubility : Insoluble at 20 °C

Density : 2.78 at 20 °C

Flammability

Burning Rate : Did not ignite. ※ UN TDG test & criteria - Test N1

Explosive properties

No self-reaction hazard ※ UN TDG test & criteria - Test E3

Melting Range : > 200 °C

Oxidizing properties : No data available

Boiling Point : No data available

Vapour Pressure : No data available

Decomposition temperature : No data available

Partition coefficient (n-octanol/water) : No data available

Viscosity : No data available

Lower explosion limit : No data available

Upper explosion limit : No data available

Molecular weight : 310.18 ※ from US HSDB

10. STABILITY AND REACTIVITY

Chemical stability

Stable under general condition.

Conditions to avoid

Avoid breathing dust.

Materials to avoid

Strong acids, Strong bases

Hazardous decomposition products

No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral	rat	LD50 : No data available	※ from IUCLID/US NLM
Skin	rabbit	LD50 : No data available	
Inhalation	rat	LC50 : No data available	

Skin irritation : Not irritating ※ from IUCLID

Eye irritation : Not irritating ※ from IUCLID

Respiratory sensitization : No data available

Skin sensitization : No data available

Carcinogenicity : Not classifiable ※ from CCRIS / IARC

Reproductive toxicity : No data available

Specific target organ toxicity – single exposure (GHS) : No data available

Specific target organ toxicity – repeated exposure (GHS) : No data available

Aspiration hazard : No data available

12. ECOLOGICAL INFORMATION

Toxicity

Fish	LC50 : No data available	※ from IUCLID
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Crustacean EC50 : No data available

Algae EC50 : No data available

Persistence and degradability : No data available

Bioaccumulative potential : No data available

Mobility in soil : No data available

Other adverse effects : No data available

13. DISPOSAL CONSIDERATIONS

Disposal consideration

Observe all environmental regulations.

Disposal precaution

Avoid disposing to the environment.

14. TRANSPORT INFORMATION

UN TDG : Not dangerous goods

IMDG : Not dangerous goods

IATA : Not dangerous goods

Marine pollution : Not applicable

Special precaution

Fire EmS Guide : F-A

Spillage EmS Guide : Not dangerous goods

15. REGULATORY INFORMATION

Korea Industrial Safety and Health Act (GHS) : Not applicable

Korea Hazardous Materials Safety Control Act : Not hazardous material

Korea Toxic Chemicals Control Act : Not toxic chemical

Korea Persistent Organic Pollutants Control Act : Not applicable

US OSHA Hazards (GHS) : Not applicable

16. OTHER INFORMATION

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Revision Date : -

References

- GHS Classification :
Korea MSDS Testing Lab Certificate (Report No. 2013-03-06-243), IUCLID, EC ESIS
- Physical and chemical properties : Korea MSDS Testing Lab Certificate, US HSDB
- Transport information : Korea MSDS Testing Lab Certificate
- Toxic & ecological information : OECD SIDS, IUCLID, US NLM, IARC, EC ESIS, CCRIS

Acronyms and Websites

- EC ESIS : European chemical Substances Information System, <http://esis.jrc.ec.europa.eu/>
- IUCLID : International Uniform Chemical Information Database, <http://esis.jrc.ec.europa.eu/>
- US NLM : U.S. National Library of Medicine, <http://chem.sis.nlm.nih.gov/chemidplus/>
- HSDB : US Hazardous Substances Data Bank, <http://toxnet.nlm.nih.gov/>
- CCRIS : US Chemical Carcinogenesis Research Information System, <http://toxnet.nlm.nih.gov/>
- IARC : International Agency for Research on Cancer, <http://monographs.iarc.fr/>

※ Hazards Testing and Classification

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This MSDS is composed in line with The Korea Occupational Safety and Health Act Article 41 to protect the health of the employees, and for documentation.

This MSDS is composed with reference to documents and criteria provided by KOSHA.

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