



OCI Company Ltd.

Material Safety Data Sheet

MSDS

Hydroxyapatite

Section 1 - Chemical Product and Company Identification

SUBSTANCE: Hydroxyapatite

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 230, Dokbae-ro, Nam-gu, Incheon, KOREA

Tel No. : 82-32-860-6114

Section 2 - Hazards Identification

1) Hazard Classification No data available

2) Warning signal

Symbol No data available

Signal word No data available

Hazard statement No data available

Prevention precautionary statements

No data available

3) NFPA

Health Rating 1

Flammability Rating 0

Reactivity Rating 0

Section 3 - Composition, Information on Ingredients

COMPONENT: Hydroxyapatite

CAS No.: 1306-06-5

PERCENTAGE: 100

Section 4 - First Aid Measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth thoroughly. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Most important symptoms/effects, acute and delayed

Symptoms: May cause irritation to skin, eyes, and respiratory tract.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

Section 5 - Fire Fighting Measures

General fire hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Avoid contact with spilled material. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Sweep up and place in a clearly labeled container for chemical waste. Avoid dust formation. Clean surface thoroughly to remove residual contamination.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

Section 7 - Handling and Storage

Precautions for safe handling: Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Minimize dust generation and accumulation. Avoid inhalation of dust. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

Section 8 - Exposure Controls, Personal Protection

Control Parameters

Occupational exposure limits None of the components have assigned exposure limits.

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection: Use tight fitting goggles if dust is generated.

Skin protection

Hand protection: Use suitable protective gloves if risk of skin contact.

Other: Wear suitable protective clothing.

Respiratory protection: In case of inadequate ventilation use suitable respirator. Particulate air-purifying respirator approved for dust or oil mist is recommended.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

Section 9 - Physical and Chemical Properties

Appearance

Physical state: Solid

Form: Powder

Color: White

Odor: Odorless

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: No data available.

Initial boiling point and boiling range: No data available.

Flash Point: No data available.

Evaporation rate: No data available.

Flammability (solid, gas): No data available.

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%): No data available.

Flammability limit - lower (%): No data available.

Explosive limit - upper (%): No data available.

Explosive limit - lower (%): No data available.

Vapor pressure: No data available.

Vapor density: No data available.

Relative density: No data available.

Solubility(ies)

Solubility in water: Insoluble.

Solubility (other): No data available.

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

Auto-ignition temperature: No data available.

Decomposition temperature: No data available.

Viscosity: No data available.

Other information

Molecular weight: 440.36

Section 10 - Stability and Reactivity

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical Stability: Material is stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur.

Conditions to Avoid: Contact with incompatible materials.

Incompatible Materials: None known.

Hazardous Decomposition Products: None known.

Section 11 - Toxicological Information

Information on likely routes of exposure

Ingestion: May cause irritation of the gastrointestinal tract.

Inhalation: May cause irritation to the respiratory system.

Skin contact: May cause irritation.

Eye contact: May cause temporary eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product: No data available.

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: No data available.

Skin corrosion/irritation Product: May cause skin irritation.

Serious eye damage/eye irritation Product: May irritate eyes.

Respiratory or skin sensitization Product: Not a skin sensitizer.

Carcinogenicity Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens: No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): No carcinogenic components identified

Germ cell mutagenicity

In vitro Product: No mutagenic components identified

In vivo Product: No mutagenic components identified

Reproductive toxicity Product: No components toxic to reproduction

Specific target organ toxicity - single exposure Product: No data available.

Specific target organ toxicity - repeated exposure Product: No data available.

Aspiration hazard Product: Not classified

Other effects: None known.

Section 12 - Ecological Information

Ecotoxicity :

Acute hazards to the aquatic environment:

Fish Product: No data available.

Aquatic invertebrates Product: No data available.

Chronic hazards to the aquatic environment:

Fish Product: No data available.

Aquatic invertebrates Product: No data available.

Toxicity to Aquatic Plants Product: No data available.

Persistence and degradability

Biodegradation Product: There are no data on the degradability of this product.

BOD/COD ratio Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF) Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow) Product: No data available.

Mobility in soil: No data available.

Other adverse effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Section 13 - Disposal Considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

Section 14 - Transport Information

DOT Not regulated.

IMDG Not regulated.

IATA Not regulated.

Section 15 - Regulatory Information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4): None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

X Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely Hazardous Substance None present or none present in regulated quantities.

SARA 304 Emergency Release Notification None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical None present or none present in regulated quantities.

SARA 313 (TRI Reporting) None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3) None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65 No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

Australia AICS: On or in compliance with the inventory

Canada DSL Inventory List: On or in compliance with the inventory

EINECS, ELINCS or NLP: On or in compliance with the inventory

Japan (ENCS) List: On or in compliance with the inventory

China Inv. Existing Chemical Substances: Not in compliance with the inventory.

Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory

Canada NDSL Inventory: Not in compliance with the inventory.

Philippines PICCS: On or in compliance with the inventory

US TSCA Inventory: On or in compliance with the inventory

New Zealand Inventory of Chemicals: On or in compliance with the inventory

Japan ISHL Listing: On or in compliance with the inventory.

Japan Pharmacopoeia Listing: Not in compliance with the inventory.

Section 16 - Other Information

Sources : KOSHA, National Emergency Management Agency

Issue date : 07/22/2015

Last updated date : 07/22/2015

Revision number : 0