

## CALCIUM HYDROGEN ORTHOPHOSPHATE ANHYDROUS

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### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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#### PRODUCT NAME

CALCIUM HYDROGEN ORTHOPHOSPHATE, ANHYDROUS.

#### OTHER NAMES

CaHPO<sub>4</sub>, CaH<sub>5</sub>PO<sub>6</sub>, "calcium hydrogen orthophosphate, anhydrous", "calcium monohydrogen phosphate", "calcium acid phosphate", "calcium hydrogen phosphate", "dicalcium phosphate", "dicalcium orthophosphate", "sec-calcium phosphate", "calcium monohydrogen phosphate, anhydrous", "calcium acid phosphate, anhydrous", "calcium hydrogen phosphate, anhydrous", "dicalcium phosphate, anhydrous", "dicalcium orthophosphate, anhydrous", "sec-calcium phosphate, anhydrous", "calcium phosphate, dibasic, anhydrous", "calcium monohydrogen phosphate, dihydrate", "calcium phosphate, dibasic, dihydrate", "calcium acid phosphate, dihydrate", "mineral salt", "Ikon dicalcium phosphate"

#### PRODUCT USE

Used as animal feed supplement, food supplement, in dentifrice, medicine, glass, fertiliser, stabiliser for plastics, dough conditioner, yeast food.

#### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

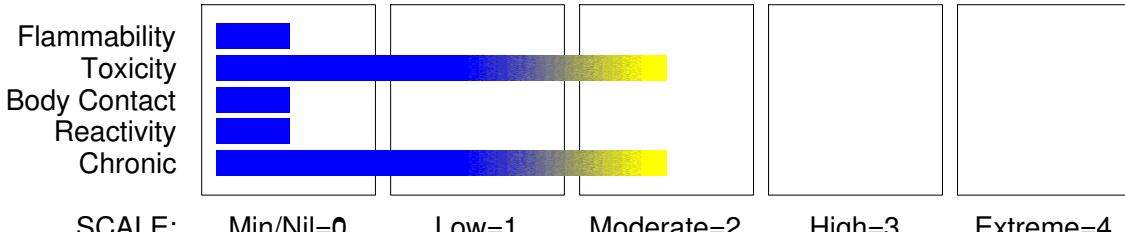
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

#### HAZARD RATINGS



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## Section 2 - HAZARDS IDENTIFICATION

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### GHS Classification

Acute Aquatic Hazard Category 2



### EMERGENCY OVERVIEW

#### HAZARD

Determined by using GHS criteria:

H401

Toxic to aquatic life

Harmful to life in the soil

#### PRECAUTIONARY STATEMENTS

#### Disposal

Dispose of contents and container in accordance with relevant legislation.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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NAME  
calcium phosphate, dibasic

CAS RN  
7757-93-9  
%  
>98

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## Section 4 - FIRST AID MEASURES

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#### SWALLOWED

Rinse mouth out with plenty of water.  
Considered to be non toxic.

#### EYE

If this product comes in contact with eyes:  
· Wash out immediately with water.  
· If irritation continues, seek medical attention.  
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

#### SKIN

Brush off dust.  
If skin or hair contact occurs:

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## Section 4 - FIRST AID MEASURES

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- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

### INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

### NOTES TO PHYSICIAN

Treat symptomatically.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- Non combustible.
- Not considered a significant fire risk, however containers may burn.

### FIRE INCOMPATIBILITY

No known incompatibility with normal range of industrial materials.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

Clean up all spills immediately.

Sweep up.

Place in suitable containers for disposal.

#### MAJOR SPILLS

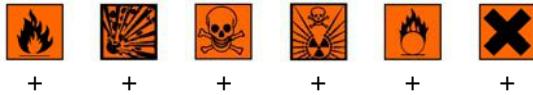
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact by using protective equipment and dust respirator.
- Prevent spillage from entering drains, sewers or water courses.
- Recover product wherever possible. Avoid generating dust.
- Sweep / shovel up.
- If required, wet with water to prevent dusting.
- Put residues in labelled plastic bags or other containers for disposal.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

- Wash area down with large quantity of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



*+: May be stored together*

*O: May be stored together with specific preventions*

*X: Must not be stored together*

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

Avoid generating and breathing dust.

Avoid contact with eyes.

Avoid physical damage to containers.

When handling, DO NOT eat, drink or smoke.

Keep containers securely sealed when not in use.

Wash hands with soap and water after handling.

### SUITABLE CONTAINER

Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag.

NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.

### STORAGE INCOMPATIBILITY

Segregate from.  
acids.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### MATERIAL DATA

These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:

- the architecture of the air spaces remain intact,
- scar tissue (collagen) is not synthesised to any degree,
- tissue reaction is potentially reversible.

Extensive concentrations of P.N.O.C.s may:

- seriously reduce visibility,
- cause unpleasant deposits in the eyes, ears and nasal passages,
- contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]

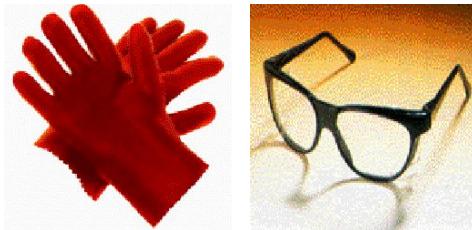
This limit does not apply:

- to brief exposures to higher concentrations
- nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.

This exposure standard applies to particles which

- are insoluble or poorly soluble\* in water or, preferably, in aqueous lung fluid (if data is available) and
- have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization , or cause toxic effects other than by inflammation or by a mechanism of lung overload).

### PERSONAL PROTECTION



#### EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

Wear general protective gloves: i.e. Disposable polythene gloves or Cotton gloves or Light weight rubber gloves, with Barrier cream preferably Safety footwear.

#### OTHER

- Overalls.
- Eyewash unit.

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# CALCIUM HYDROGEN ORTHOPHOSPHATE ANHYDROUS

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	--	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
100+ x ES	-	Air- line*	-
		Air- line**	PAPR- P3

\* - Negative pressure demand \*\* - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

None required when handling small quantities.

OTHERWISE:

Use in a well-ventilated area.

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
  - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
  - (b): filter respirators with absorption cartridge or canister of the right type;
  - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)  
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

Air Speed:

1- 2.5 m/s (200- 500 f/min.)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to

Upper end of the range

1: Disturbing room air currents

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

capture

- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

- 2: Contaminants of high toxicity

- 3: High production, heavy use
- 4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

White, odourless, tasteless, granular or powdered solid.  
Sparingly insoluble in water; readily soluble in dilute hydrochloric acid and nitric acid, insoluble in alcohol.

### PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Sinks in water.

Molecular Weight: 136.06

Melting Range (°C): 109C (loss H<sub>2</sub>O)

Solubility in water (g/L): Partly miscible

pH (1% solution): 4.5

Volatile Component (%vol): Not applicable.

Relative Vapour Density (air=1): Not applicable.

Lower Explosive Limit (%): Not applicable

Autoignition Temp (°C): Not applicable

State: Divided solid

Boiling Range (°C): Not applicable.

Specific Gravity (water=1): 2.31 (dihydrate)

pH (as supplied): Not available

Vapour Pressure (kPa): Not applicable.

Evaporation Rate: Not applicable

Flash Point (°C): Not applicable

Upper Explosive Limit (%): Not applicable

Decomposition Temp (°C): 350

Viscosity: Not available

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

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# CALCIUM HYDROGEN ORTHOPHOSPHATE ANHYDROUS

## Section 11 - TOXICOLOGICAL INFORMATION

### ACUTE HEALTH EFFECTS

#### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.

Considered to be non toxic.

Small amounts or low dose rates are regarded as.  
practically non-harmful.

The material may be mildly discomforting.  
if swallowed in large quantity.

Phosphates are slowly and incompletely absorbed from the gastrointestinal tract and are unlikely (other than in abuse) to produce the systemic effects which occur when introduced by other routes. Such effects include vomiting, lethargy, fever, diarrhoea, falls in blood pressure, slow pulse, cyanosis, carpal spasm, coma and tetany. These effects result following sequestration of blood calcium.

Ingestion of large amounts of phosphate salts (over 1 gm for an adult) may produce osmotic catharsis resulting in diarrhoea and probably, abdominal cramp. Large doses (4-8 gm) will almost certainly produce these effects in most individuals. Most of the ingested salt will be excreted in the faeces of healthy individuals without producing systemic toxicity. Doses in excess of 10 gm may produce systemic toxicity.

#### EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

The material may be mildly discomforting.  
and.  
abrasive.  
to the eyes.

#### SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Not considered to cause discomfort through normal use.  
The material may be mildly discomforting.  
and.  
slightly.  
abrasive.  
to the skin.

#### INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Not normally a hazard due to non-volatile nature of product.  
The dust is.  
moderately.  
discomforting.  
to the upper respiratory tract.

# CALCIUM HYDROGEN ORTHOPHOSPHATE ANHYDROUS

## Section 11 - TOXICOLOGICAL INFORMATION

### CHRONIC HEALTH EFFECTS

Considered to be non toxic.

Primary route of exposure is usually by inhalation of generated dust.

Dogs given daily doses of sodium phosphate dibasic for 9-22 weeks showed calcium deposits in the kidneys (nephrocalcinosis) with disseminated atrophy of the proximal tubule.

Animals fed on sodium phosphate dibasic and potassium dihydrogen phosphate, in both short - and long-term studies, showed increased bone porosity; hyperparathyroidism and soft tissue calcification were also evident.

### TOXICITY AND IRRITATION

#### TOXICITY

Oral (rat) LD50: >10000 mg/kg

Dermal (rabbit) LD50: >7940 mg/kg

#### IRRITATION

Eye (rabbit): 8 on a scale of 110

Skin (rabbit): 0 on a scale of 8

[Manufacturer]

## Section 12 - ECOLOGICAL INFORMATION

The principal problems of phosphate contamination of the environment relates to eutrophication processes in lakes and ponds. Phosphorus is an essential plant nutrient and is usually the limiting nutrient for blue-green algae. A lake undergoing eutrophication shows a rapid growth of algae in surface waters. Planktonic algae cause turbidity and flotation films. Shore algae cause ugly muddying, films and damage to reeds. Decay of these algae causes oxygen depletion in the deep water and shallow water near the shore. The process is self-perpetuating because anoxic conditions at the sediment/water interface causes the release of more adsorbed phosphates from the sediment. The growth of algae produces undesirable effects on the treatment of water for drinking purposes, on fisheries, and on the use of lakes for recreational purposes.

## Section 13 - DISPOSAL CONSIDERATIONS

Recycle if possible, otherwise dispose in a chemically secure landfill.

For small quantities:

- Neutralise an aqueous solution of the material.
- Filter solids for disposal to approved land fill.
- Flush solution to sewer (subject to local regulation)
- Heat and fumes evolved during reaction may be controlled by rate of addition.

## Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

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## Section 15 - REGULATORY INFORMATION

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### REGULATIONS

calcium phosphate, dibasic (CAS: 7757-93-9) is found on the following regulatory lists;  
OECD Representative List of High Production Volume (HPV) Chemicals

No data available for calcium phosphate, dibasic as CAS: 288297-00-7, CAS: 155420-92-1,  
CAS: 53168-52-8, CAS: 17248-11-2.

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## Section 16 - OTHER INFORMATION

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### INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
calcium phosphate, dibasic	7757- 93- 9, 288297 - 00- 7, 155420- 92- 1, 53168- 52- 8, 17248- 11- 2

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

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