

Calcium sulfate hemihydrate

sc-252544

Material Safety Data Sheet



The Power is Question

Hazard Alert Code
Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Calcium sulfate hemihydrate

STATEMENT OF HAZARDOUS NATURE

Not considered a hazardous substance according to OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Company: Santa Cruz Biotechnology, Inc.

Address:

2145 Delaware Ave

Santa Cruz, CA 95060

Telephone: 800.457.3801 or 831.457.3800

Emergency Tel: CHEMWATCH: From within the US and
Canada: 877-715-9305

Emergency Tel: From outside the US and Canada: +800 2436
2255 (1-800-CHEMCALL) or call +613 9573 3112

PRODUCT USE

As Plaster of Paris used for patching cracked or damaged plaster walls, making moulds, splints.

SYNONYMS

Ca-H₂-S-O₄.1/2H₂O, Ca-H₂-S-O₄.1/2H₂O, Ca(SO₄).1/2H₂O, "sulfuric acid calcium salt hemi hydrate hemihydrate", "patching plaster powder", "plaster moulding powder", "calcium sulfate half hydrate", "gypsum plaster", "Australian Gypsum EP 055", "stone (alpha-hemihydrate form)"

Section 2 - HAZARDS IDENTIFICATION

CANADIAN WHMIS SYMBOLS

None

EMERGENCY OVERVIEW

RISK

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality (death) rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

■ Sulfates are not well absorbed orally, but can cause diarrhea.

EYE

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

SKIN

- The material is not thought to produce adverse health effects or skin irritation following contact (as classified 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.

- Solution of material in moisture on the skin, or perspiration, may increase irritant effects.

INHALED

- The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified 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.

- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

- Principal routes of exposure are usually by skin contact/eye contact and inhalation of generated dust.

Indicators are that short term exposure to the material by all routes is not harmful.

As with any chemical product, contact with unprotected bare skin; inhalation of vapor, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

HAZARD RATINGS

| | Min | Max |
|---------------|-----|-----|
| Flammability: | 0 | |
| Toxicity: | 1 | |
| Body Contact: | 0 | |
| Reactivity: | 0 | |
| Chronic: | 0 | |

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

| NAME | CAS RN | % |
|-----------------------------|------------|-----|
| calcium sulfate hemihydrate | 10034-76-1 | >95 |

Section 4 - FIRST AID MEASURES

SWALLOWED

-
- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

-
- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

- Treat symptomatically.
- Ingestion of sufficient material could cause physical obstruction.

Section 5 - FIRE FIGHTING MEASURES

| | |
|-----------------------------|----------------|
| Vapour Pressure (mmHG): | Not applicable |
| Upper Explosive Limit (%): | Not applicable |
| Specific Gravity (water=1): | 2.6-2.7 |
| Lower Explosive Limit (%): | Not applicable |

EXTINGUISHING MEDIA

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

FIRE FIGHTING

-

- Alert Emergency Responders 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 course.
- 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.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

-
- Non combustible.
- Not considered to be a significant fire risk, however containers may burn.
- In a fire may decompose on heating and produce toxic / corrosive fumes.

PERSONAL PROTECTION

Glasses:

Not normally required.

Gloves:

Respirator:

Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

-
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety glasses.
- Use dry clean up procedures and avoid generating dust.
- Sweep up or vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
- Place spilled material in clean, dry, sealable, labeled container.

MAJOR SPILLS

-
- Clear area of personnel and move upwind.
- Alert Emergency Responders 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.
- Avoid generating dust.
- Sweep, shovel up.
- Recover product wherever possible.
- Put residues in labeled plastic bags or other containers for disposal.
- If contamination of drains or waterways occurs, advise emergency services.

ACUTE EXPOSURE GUIDELINE LEVELS (AEGl) (in ppm)

AEGl 1: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

AEGl 2: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape.

AEGl 3: The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

-
- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- When handling DO NOT eat, drink or smoke.
- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.

RECOMMENDED STORAGE METHODS

■ 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 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.

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.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X: Must not be stored together
 O: May be stored together with specific preventions
 +: May be stored together

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

| Source | Material | TWA ppm | TWA mg/m ³ | STEL ppm | STEL mg/m ³ | Peak ppm | Peak mg/m ³ | TWA F/CC | Notes |
|---|--|---------|-----------------------|----------|------------------------|----------|------------------------|----------|---------------------------|
| Canada - Prince Edward Island Occupational Exposure Limits | calcium sulfate hemihydrate (Calcium sulfate hemihydrate) | | 10 | | | | | | TLV Basis: nasal symptoms |
| US ACGIH Threshold Limit Values (TLV) | calcium sulfate hemihydrate (Calcium sulfate hemihydrate) | | 10 | | | | | | TLV Basis: nasal symptoms |
| Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances | calcium sulfate hemihydrate (Plaster of Paris) | | (See Table 11) | | | | | | |
| Canada - Nova Scotia Occupational Exposure Limits | calcium sulfate hemihydrate (Calcium sulfate hemihydrate) | | 10 | | | | | | TLV Basis: nasal symptoms |
| Canada - Alberta Occupational Exposure Limits | calcium sulfate hemihydrate (Plaster of Paris (Calcium sulfate; Gypsum)) | | 10 | | | | | | |
| Canada - British Columbia Occupational Exposure Limits | calcium sulfate hemihydrate (Plaster of Paris) | | 10 (N) | | 20 | | | | |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium sulfate hemihydrate (Plaster of Paris - Respirable fraction) | | 5 | | | | | | |
| US NIOSH Recommended Exposure Limits (RELs) | calcium sulfate hemihydrate (Plaster of Paris) | | 5 | | | | | | |
| US NIOSH Recommended Exposure Limits (RELs) | calcium sulfate hemihydrate (Plaster of Paris) | | 10 | | | | | | |
| US - Idaho - Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of Paris - Respirable fraction) | | 5 | | | | | | |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | calcium sulfate hemihydrate (Plaster of Paris Total dust) | | 15 | | | | | | |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | calcium sulfate hemihydrate (Plaster of Paris Respirable fraction) | | 5 | | | | | | |
| US - Minnesota Permissible Exposure Limits (PELs) | calcium sulfate hemihydrate (Plaster of Paris - Total dust) | | 15 | | | | | | |
| US - Minnesota Permissible Exposure Limits (PELs) | calcium sulfate hemihydrate (Plaster of Paris - Respirable fraction) | | 5 | | | | | | |

| EXPOSURE LIMITS (FELS) | fraction) | | |
|---|---|----|----|
| US - Idaho - Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of paris - Total dust) | 15 | |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium sulfate hemihydrate (Plaster of Paris - Total dust) | 15 | |
| US - Hawaii Air Contaminant Limits | calcium sulfate hemihydrate (Plaster of Paris - Respirable fraction) | 5 | |
| US - Michigan Exposure Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of Paris (Calcium sulfate), Respirable dust) | 5 | |
| US - Michigan Exposure Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of Paris (Calcium sulfate), Total dust) | 15 | |
| US - Washington Permissible exposure limits of air contaminants | calcium sulfate hemihydrate (Plaster of Paris - Total particulate) | 10 | 20 |
| US - Washington Permissible exposure limits of air contaminants | calcium sulfate hemihydrate (Plaster of Paris - Respirable fraction) | 5 | 10 |
| US - Hawaii Air Contaminant Limits | calcium sulfate hemihydrate (Plaster of Paris - Total dust) | 10 | |
| US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of paris- Respirable fraction) | 5 | |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English) | calcium sulfate hemihydrate (Plaster of Paris) | 10 | |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English) | calcium sulfate hemihydrate (Plaster of Paris) | 5 | |
| US - Oregon Permissible Exposure Limits (Z1) | calcium sulfate hemihydrate (Plaster of Paris Total Dust) | 10 | * |
| US - Oregon Permissible Exposure Limits (Z1) | calcium sulfate hemihydrate (Plaster of Paris Respirable Fraction) | 5 | * |
| US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of paris- Total dust) | 15 | |
| US - Idaho - Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Respirable fraction) | 5 | |
| US - Idaho - Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 15 | |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate Total dust) | 15 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 15 | |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate Respirable fraction) | 5 | |
| Canada - Alberta Occupational Exposure Limits | calcium sulfate hemihydrate (Calcium sulphate (Plaster of Paris, Gypsum)) | 10 | |
| US NIOSH Recommended Exposure Limits (RELs) | calcium sulfate hemihydrate (Calcium sulfate) | 5 | |
| Canada - British Columbia Occupational Exposure Limits | calcium sulfate hemihydrate (Calcium sulfate, Inhalable) | 10 | |
| US - Minnesota Permissible Exposure Limits (PELs) | calcium sulfate hemihydrate (Calcium sulfate - Respirable fraction) | 5 | |
| US - Minnesota Permissible Exposure Limits (PELs) | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 15 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Respirable fraction) | 5 | |
| US - Vermont Permissible | | | |

| | | | |
|--|--|----|----|
| Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | calcium sulfate hemihydrate (Gypsum - Total dust) | 15 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Respirable fraction) | 5 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | calcium sulfate hemihydrate (Gypsum - Respirable fraction) | 5 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of paris - Respirable fraction) | 5 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of paris - Total dust) | 15 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | calcium sulfate hemihydrate (Gypsum - Respirable fraction) | 5 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | calcium sulfate hemihydrate (Gypsum - Total dust) | 15 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of paris - Total dust) | 15 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 15 | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | calcium sulfate hemihydrate (Plaster of paris - Respirable fraction) | 5 | |
| US - Alaska Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Respirable fraction) | 5 | |
| US - Alaska Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 15 | |
| US - Michigan Exposure Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Respirable dust) | 5 | |
| US - Oregon Permissible Exposure Limits (Z1) | calcium sulfate hemihydrate (Calcium sulfate Total Dust) | 10 | * |
| US - Michigan Exposure Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 15 | |
| US - Washington Permissible exposure limits of air contaminants | calcium sulfate hemihydrate (Calcium sulfate-Respirable fraction) | 5 | 10 |
| US - Washington Permissible exposure limits of air contaminants | calcium sulfate hemihydrate (Calcium sulfate-Total particulate) | 10 | 20 |
| Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits | calcium sulfate hemihydrate (Plaster of Paris (Calcium sulphate)) | 10 | 20 |
| US - Hawaii Air Contaminant Limits | calcium sulfate hemihydrate (Calcium sulfate - Respirable fraction) | 5 | |
| US - Hawaii Air Contaminant Limits | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 10 | |
| US - Oregon Permissible Exposure Limits (Z1) | calcium sulfate hemihydrate (Calcium sulfate Respirable Fraction) | 5 | * |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium sulfate hemihydrate (Calcium sulfate - Total dust) | 15 | |
| Canada - Quebec Permissible Exposure Values for Airborne | calcium sulfate hemihydrate (Calcium sulfate) | 5 | |

| Contaminants (English) | (Calcium sulfate) | | |
|--|---|----|---------------------------|
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | calcium sulfate hemihydrate (Calcium sulfate - Respirable fraction) | 5 | |
| US NIOSH Recommended Exposure Limits (RELs) | calcium sulfate hemihydrate (Calcium sulfate) | 10 | |
| US ACGIH Threshold Limit Values (TLV) | calcium sulfate hemihydrate (Calcium sulfate) | 10 | TLV Basis: nasal symptoms |
| Canada - Prince Edward Island Occupational Exposure Limits | calcium sulfate hemihydrate (Calcium sulfate) | 10 | TLV Basis: nasal symptoms |
| Canada - Nova Scotia Occupational Exposure Limits | calcium sulfate hemihydrate (Calcium sulfate) | 10 | TLV Basis: nasal symptoms |
| US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate- Total dust) | 15 | |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English) | calcium sulfate hemihydrate (Calcium sulfate) | 10 | |
| US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants | calcium sulfate hemihydrate (Calcium sulfate- Respirable fraction) | 5 | |
| Canada - Ontario Occupational Exposure Limits | calcium sulfate hemihydrate (Calcium sulfate, inhalable, including Gypsum and plaster of Paris) | 10 | |

MATERIAL DATA

CALCIUM SULFATE HEMIHYDRATE:

The TLV-TWA is thought to be protective against the significant risks of eye, skin and other physical irritation.

PERSONAL PROTECTION



Consult your EHS staff for recommendations

EYE

- No special equipment for minor exposure i.e. when handling small quantities.
- OTHERWISE:
 - Safety glasses with side shields.
 - Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

HANDS/FEET

- No special equipment needed when handling small quantities.
- OTHERWISE: Wear general protective gloves, eg. light weight rubber gloves.

OTHER

- No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Barrier cream.
- Eyewash unit.

RESPIRATOR

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

* - Negative pressure demand ** - Continuous flow

Explanation of Respirator Codes:

Class 1 low to medium absorption capacity filters.

Class 2 medium absorption capacity filters.

Class 3 high absorption capacity filters.

PAPR Powered Air Purifying Respirator (positive pressure) cartridge.

Type A for use against certain organic gases and vapors.

Type AX for use against low boiling point organic compounds (less than 65°C).

Type B for use against certain inorganic gases and other acid gases and vapors.

Type E for use against sulfur dioxide and other acid gases and vapors.

Type K for use against ammonia and organic ammonia derivatives

Class P1 intended for use against mechanically generated particulates of sizes most commonly encountered in industry, e.g. asbestos, silica.

Class P2 intended for use against both mechanically and thermally generated particulates, e.g. metal fume.

Class P3 intended for use against all particulates containing highly toxic materials, e.g. beryllium.

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

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

ENGINEERING CONTROLS

- 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:
 - particle dust respirators, if necessary, combined with an absorption cartridge;
 - filter respirators with absorption cartridge or canister of the right type;
 - 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: | Air Speed: |
|--|------------------------------|
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) |

Within each range the appropriate value depends on:

| Lower end of the range | Upper end of the range |
|---|----------------------------------|
| 1: Room air currents minimal or favorable to capture | 1: Disturbing room air currents |
| 2: Contaminants of low toxicity or of nuisance value only | 2: Contaminants of high toxicity |
| 3: Intermittent, low production. | 3: High production, heavy use |
| 4: Large hood or large air mass in motion | 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 meters 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

PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Sinks in water.

| | | | |
|---------------------------|------------------------------|--------------------------------|-----------------|
| State | Divided solid | Molecular Weight | 145.15 |
| Melting Range (°F) | 325.4 (-1/2H ₂ O) | Viscosity | Not available |
| Boiling Range (°F) | Not available | Solubility in water (g/L) | Partly miscible |
| Flash Point (°F) | Not applicable | pH (1% solution) | Not applicable |
| Decomposition Temp (°F) | Not available | pH (as supplied) | Not applicable |
| Autoignition Temp (°F) | Not available | Vapour Pressure (mmHG) | Not applicable |
| Upper Explosive Limit (%) | Not applicable | Specific Gravity (water=1) | 2.6-2.7 |
| Lower Explosive Limit (%) | Not applicable | Relative Vapor Density (air=1) | Not applicable |
| Volatile Component (%vol) | Not applicable | Evaporation Rate | Not applicable |

APPEARANCE

White powder. No odour. When slurried with water hardens in 65-80 minutes. (Boral/AGL grade EP055 25-40 mins.) Very slightly soluble in cold water (0.2-0.3 g/L), slightly soluble in hot water.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Product is considered stable and hazardous polymerization will not occur.

STORAGE INCOMPATIBILITY

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.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

calcium sulfate hemihydrate

TOXICITY AND IRRITATION

- No significant acute toxicological data identified in literature search.

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

CALCIUM SULFATE HEMIHYDRATE:

Ecotoxicity

| Ingredient | Persistence: Water/Soil | Persistence: Air | Bioaccumulation | Mobility |
|-----------------------------|-------------------------|------------------|-----------------|----------|
| calcium sulfate hemihydrate | HIGH | | LOW | HIGH |

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

|

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.
- Bury residue in an authorized landfill.
- Recycle containers where possible, or dispose of in an authorized landfill.

Section 14 - TRANSPORTATION INFORMATION

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

Section 15 - REGULATORY INFORMATION

calcium sulfate hemihydrate (CAS: 10034-76-1,26499-65-0) is found on the following regulatory lists; "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "OECD Representative List of High Production Volume (HPV) Chemicals", "US - Minnesota Hazardous Substance List", "US ACGIH Threshold Limit Values (TLV)"

Section 16 - OTHER INFORMATION

Ingredients with multiple CAS Nos

| Ingredient Name | CAS |
|-----------------------------|------------------------|
| calcium sulfate hemihydrate | 10034-76-1, 26499-65-0 |

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- Classification of the mixture and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: Oct-8-2006

Print Date:Apr-22-2010