

CALCIUM SULFATE, ANHYDROUS
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MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

CAS-NUMBER 7778-18-9

SUBSTANCE: **CALCIUM SULFATE, ANHYDROUS**

TRADE NAMES/SYNONYMS:

SULFURIC ACID, CALCIUM SALT (1:1); CALCIUM SULFATE;
 ANHYDROUS CALCIUM SULFATE; CALCIUM SULFATE(CAS04); CALCIUM SULFATE(1:1);
 CALCIUM SULPHATE; SULFURIC ACID CALCIUM SALT; CRYSLBA; DRIERITE; GIBS;
 NATURAL ANHYDRITE; KARSTENITE; MURIACITE; ANHYDROUS SULFATE OF LIME;
 ANHYDROUS GYPSUM; C-138; CA045;

CHEMICAL FAMILY:
 INORGANIC SALT

MOLECULAR FORMULA: CA-S-04

MOLECULAR WEIGHT: 136.14

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=0 REACTIVITY=0 PERSISTENCE=0
 NFPA RATINGS (SCALE 0-4): HEALTH=U FIRE=0 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: CALCIUM SULFATE, ANHYDROUS PERCENT: 100
 CAS# 7778-18-9

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:

CALCIUM SULFATE:

5 MG/M3 OSHA TWA (RESPIRABLE DUST); 15 MG/M3 OSHA TWA (TOTAL DUST)
 10 MG/M3 ACGIH TWA (TOTAL DUST) (NO ASBESTOS AND < 1% CRYSTALLINE SILICA)
 5 MG/M3 NIOSH RECOMMENDED TWA (RESPIRABLE DUST);
 10 MG/M3 NIOSH RECOMMENDED TWA (TOTAL DUST)
 6 MG/M3 DFG MAK TWA (FINE DUST)

PHYSICAL DATA

DESCRIPTION: ODORLESS WHITE WITH A BLUE, GRAY OR REDDISH TINGE OR BRICK RED,
RHOMBIC OR MONOCLINIC CRYSTALS OR POWDER. MELTING POINT: 2642 F (1450 C)
SPECIFIC GRAVITY: 2.964 SOLUBILITY IN WATER: 0.2%
SOLVENT SOLUBILITY: SOLUBLE IN ACIDS, AMMONIUM SALTS, GLYCEROL, SODIUM
SULFATE.
MOHR HARDNESS: 3-3.5 MOHS'

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
NEGLECTIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

FIREFIGHTING MEDIA:
EXTINGUISH USING AGENT SUITABLE FOR TYPE OF SURROUNDING FIRE.

FIREFIGHTING:
NO ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING
VAPORS OR DUSTS; KEEP UPWIND.

TOXICITY

CALCIUM SULFATE:
TOXICITY DATA:
ANHYDROUS: NO DATA AVAILABLE.
HEMIHYDRATE: NO DATA AVAILABLE.
MONOHYDRATE: NO DATA AVAILABLE.
DIHYDRATE: 194 GM/M3/10 YEAR INTERMITTENT INHALATION-HUMAN TCLO;
TUMORIGENIC DATA (RTECS).
PENTAHYDRATE: NO DATA AVAILABLE.
CARCINOGEN STATUS: NONE.
ACUTE TOXICITY LEVEL: INSUFFICIENT DATA.
TARGET EFFECTS: NO DATA AVAILABLE.

HEALTH EFFECTS AND FIRST AID

INHALATION:
CALCIUM SULFATE:
ACUTE EXPOSURE- MAY BE CONSIDERED A NUISANCE DUST, DEPENDING ON SILICA
CONTENT. EXCESSIVE CONCENTRATIONS OF NUISANCE DUSTS MAY CAUSE UNPLEASANT
DEPOSITS IN THE NASAL PASSAGES AND COUGH.
CHRONIC EXPOSURE- MAY BE CONSIDERED A NUISANCE DUST, DEPENDING ON SILICA
CONTENT. NUISANCE DUSTS HAVE A LONG HISTORY OF LITTLE ADVERSE EFFECT
ON LUNGS AND DO NOT PRODUCE SIGNIFICANT ORGANIC DISEASE, TOXIC EFFECT
OR SCAR TISSUE FORMATION WHEN EXPOSURES ARE KEPT UNDER REASONABLE
CONTROL. HOWEVER, ONE STUDY REPORTS NASAL EFFECTS, FIBROSING ALVEOLITIS
AND OTHER LUNG CHANGES FROM A CONCENTRATION OF 194 GM/M3 FOR A TEN

YEAR PERIOD OF INTERMITTENT EXPOSURES IN HUMANS. INHALATION OF GYPSUM, WHICH IS HYDRATED CALCIUM SULFATE, HAS BEEN REPORTED TO CAUSE IRRITATION OF THE RESPIRATORY TRACT, CHRONIC RHINITIS, LARYNGITIS, PHARYNGITIS, IMPAIRED SENSE OF SMELL AND TASTE, EPISTAXIS, AND REACTIONS OF THE TRACHEAL AND BRONCHIAL MEMBRANES IN EXPOSED WORKERS. EXPERIMENTAL ANIMALS EXPOSED DEVELOPED PNEUMONIA, INTERSTITIAL PNEUMOSCLEROSIS, AND BLOOD AND LYMPH CIRCULATION DISORDERS IN THE LUNGS. HOWEVER, THIS MAY BE DUE TO HIGH CONCENTRATIONS OF FURNACE GASES OR SMOKE.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT:

CALCIUM SULFATE:

ACUTE EXPOSURE- MAY BE CONSIDERED A NUISANCE DUST, DEPENDING ON SILICA CONTENT. EXCESSIVE CONCENTRATIONS OF NUISANCE DUSTS IN THE WORKROOM AIR MAY CAUSE UNPLEASANT DEPOSITS ON THE SKIN. INJURY MAY OCCUR DUE TO THE RIGOROUS SKIN CLEANSING PROCEDURES NECESSARY FOR REMOVAL.

CHRONIC EXPOSURE- PLASTER OF PARIS (HYDRATED CALCIUM SULFATE WITH 5X WATER) MAY CAUSE A DERMATOSIS TO DEVELOP.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

CALCIUM SULFATE:

ACUTE EXPOSURE- CALCIUM SULFATE APPLIED EXPERIMENTALLY AS A WATERY PASTE TO RABBIT EYES HAS BEEN FOUND TO BE INNOCUOUS. MAY BE CONSIDERED A NUISANCE DUST, DEPENDING ON SILICA CONTENT. EXCESSIVE CONCENTRATIONS OF NUISANCE DUSTS MAY SERIOUSLY REDUCE VISIBILITY.

CHRONIC EXPOSURE- REPEATED OR PROLONGED EXPOSURE TO HYDRATED CALCIUM SULFATE DUST HAS BEEN REPORTED TO CAUSE CONJUNCTIVITIS IN EXPOSED WORKERS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE, OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

CALCIUM SULFATE:

ACUTE EXPOSURE- SINCE IT HARDENS QUICKLY AFTER ABSORBING MOISTURE, INGESTION OF PLASTER OF PARIS (ANHYDROUS CALCIUM SULFATE OR DIHYDRATE WITH 5X WATER) MAY CAUSE OBSTRUCTION PARTICULARLY IN THE PYLORUS. CALCIUM SALTS MAY CAUSE GASTRIC IRRITATION DUE IN PART TO OSMOTIC DISTURBANCES. THE ESTIMATED HUMAN LETHAL DOSE FOR HYDROUS CALCIUM SULFATE IS 0.5 TO 5.0 GM/KG.

CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- GIVE GLYCERIN OR GELATIN SOLUTIONS OR LARGE AMOUNTS OF WATER TO DELAY SETTING PROCESS (DEICHMANN, TOXICOLOGY OR DRUGS AND CHEMICALS, 1967). TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

ANTIDOTE:
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:
CALCIUM SULFATE:
ALUMINUM; VIOLENT OR EXPLOSIVE REDUCTION REACTION.
DIAZOMETHANE (VAPOR); MAY EXPLODE ON CONTACT.
PHOSPHORUS (RED); POSSIBLE FIRE HAZARD.

DECOMPOSITION:
THERMAL DECOMPOSITION MAY RELEASE TOXIC OXIDES OF SULFUR.

POLYMERIZATION:
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

STORAGE

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

CONDITIONS TO AVOID

NONE REPORTED.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
NO SPECIAL PRECAUTIONS INDICATED.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE LOCAL EXHAUST VENTILATION SYSTEM TO MEET PUBLISHED EXPOSURE LIMITS.

RESPIRATOR:
THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON INFORMATION FOUND IN THE PHYSICAL DATA, TOXICITY AND HEALTH EFFECTS SECTIONS. THEY ARE RANKED IN ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION.
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON CONTAMINATION LEVELS FOUND IN THE WORK PLACE, MUST BE BASED ON THE SPECIFIC OPERATION, MUST NOT EXCEED

THE WORKING LIMITS OF THE RESPIRATOR AND MUST BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION (NIOSH-MSHA).

ANY DUST AND MIST RESPIRATOR.

ANY AIR-PURIFYING RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY POWERED AIR-PURIFYING RESPIRATOR WITH A DUST AND MIST FILTER.

ANY POWERED AIR-PURIFYING RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY TYPE 'C' SUPPLIED-AIR RESPIRATOR OPERATED IN THE PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE OR CONTINUOUS-FLOW MODE.

ANY SELF-CONTAINED BREATHING APPARATUS.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

CLOTHING:

PROTECTIVE CLOTHING NOT REQUIRED. AVOID REPEATED OR PROLONGED CONTACT WITH THIS SUBSTANCE.

GLOVES:

PROTECTIVE GLOVES ARE NOT REQUIRED BUT RECOMMENDED.

EYE PROTECTION:

EYE PROTECTION NOT REQUIRED, BUT ADVISABLE.

AUTHORIZED - FISHER SCIENTIFIC, INC.
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