



SECTION 1
CHEMICAL PRODUCT AND IDENTIFICATION

United States Gypsum Company
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A Subsidiary of USG Corporation

Product Safety:
Ph: AUS: 1800 757 943, NZ 0800 874 496
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Version Date: January 1, 2008, Version: 5

PRODUCT(S) | GARDEN CAST™ Gypsum Cement

CHEMICAL FAMILY / GENERAL CATEGORY | Industrial Products, Art and Statuary

SYNONYMS | Formulated product containing Plaster of Paris (Calcium Sulfate Hemihydrate) (CaSO4•½H2O)

SECTION 2
HAZARD IDENTIFICATION

EMERGENCY OVERVIEW:
ΔWARNING!

This product is not expected to produce any unusual hazards during normal use. Exposure to high dust levels may irritate the skin, eyes, nose, throat, or upper respiratory tract. Portland cement is a nuisance dust. However, portland cement is strongly alkaline and can cause severe injury. Contact with eyes or skin can cause irritation and possible irreversible tissue damage, corrosion damage, chemical burning and corneal damage. Wear eye and skin protection.

POTENTIAL HEALTH EFFECTS (See Section 11 for more information)

ACUTE :

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| Inhalation | Exposure to dust generated during the handling or use of the product may irritate eyes, skin, nose, throat, and upper respiratory tract. Persons subjected to large amounts of this dust will be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation. Labored breathing may occur after excessive inhalation. If respiratory symptoms persist, consult physician. Inhalation of portland cement dust can irritate or burn the nose, throat, and mucous membrane of the upper respiratory tract. Signs of excessive exposure to this dust include shortness of breath and reduced pulmonary function. If respiratory symptoms persist, consult physician. |
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| Eyes | Dust can cause mechanical irritation of eyes. If burning, redness, itching, pain or other symptoms persist or develop, consult physician. Portland Cement is a strongly alkaline material and is very irritating to eyes. The extent of damage depends on duration of contact. Rapid response is very important to prevent significant damage to the eye (See Section 4, First Aid Measures). Portland cement can cause burns and cornea damage that may result in permanent damage with risk of blindness. Contact lenses should not be worn when working with portland cement. If burning, redness, itching, pain or other symptoms persist or develop, consult physician. |
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| Skin | None known. |
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| Ingestion | None known. |
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CHRONIC:

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| Inhalation | Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of developing silicosis is dependent upon the exposure intensity and duration. |
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| | |
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| Eyes | None known. |
| Skin | None known. |
| Ingestion | None known. |

TARGET ORGANS: Eyes, skin and respiratory system.

PRIMARY ROUTES OF ENTRY: Inhalation, eyes and skin contact.

CARCINOGENICITY CLASSIFICATION OF INGREDIENT(S) All substances listed are associated with the nature of the raw materials used in the manufacture of this product and are not independent components of the product formulation. All substances, if present, are at levels well below regulatory limits. See Section 11: Toxicology Information for detailed information.

| MATERIAL | IARC | NTP | ACGIH | CAL- 65 |
|--------------------|------|-----|-------|---------|
| Crystalline silica | 1 | 1 | A2 | Listed |

IARC - International Agency for Research on Cancer: 1- Carcinogenic to humans; 2A – Probably carcinogenic to humans; 2B – Possibly carcinogenic to humans; 3 - Not classifiable as a carcinogen; 4 – Probably not a carcinogen

NTP – National Toxicology Program (Health and Human Services Dept., Public Health Service, NIH/NIEHS): 1- Known to be carcinogen; 2- Anticipated to be carcinogens

ACGIH – American Conference of Governmental Industrial Hygienists: A1 – Confirmed human carcinogen; A2 – Suspected human carcinogen; A3 – Animal carcinogen; A4 - Not classifiable as a carcinogen; A5 – Not suspected as a human carcinogen

CAL-65 – California Proposition 65 “Chemicals known to the State of California to Cause Cancer”

Respirable crystalline silica: IARC: Group 1 carcinogen, NTP: Known human carcinogen. The weight percent of crystalline silica given represents total quartz and not the respirable fraction. The weight percent of respirable silica has not been measured in this product.

POTENTIAL ENVIRONMENTAL EFFECTS: Portland cement is expected to be toxic to fish due to its high alkalinity (pH > 12). Discharge of large quantities directly into waterways would be expected to cause significant fish kills. (See Section 12 for more information.)

SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

| MATERIAL | WT% | CAS # |
|---|-----|------------|
| Plaster of Paris (CaSO ₄ •½H ₂ O) | >60 | 26499-65-0 |
| Portland Cement | >40 | 65997-15-1 |
| Crystalline Silica | <1 | 14808-60-7 |

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory and the Canadian Domestic Substances List (DSL).

The weight percent for silica represents total quartz and not the respirable fraction.

SECTION 4 FIRST AID MEASURES

FIRST AID PROCEDURES



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| Inhalation | Remove to fresh air. Leave the area of exposure and remain away until coughing and other symptoms subside. Other measures are usually not necessary, however if conditions warrant, contact physician. |
| Eyes | In case of contact, do not rub or scratch your eyes. Due to portland cement content in this product, if eye contact occurs immediately flush eyes with copious amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this material. |
| Skin | To prevent the drying effect of plaster of paris, wash with mild soap and water. A commercially available hand lotion may be used to treat dry skin areas. If skin has become cracked, take appropriate action to prevent infection and promote healing. If irritation persists, consult physician. Because of the potential of chemical burns due to the portland cement content of this product, flush exposed skin with copious amounts of water for at least 15 minutes depending on concentration, amount and duration of exposure. Wash with mild soap and water. Immediately remove all contaminated clothing, including footwear. Launder clothing before reuse. If irritation or pain persists get medical attention immediately. A commercially available hand lotion may be used to treat dry skin areas. If skin has become cracked, take appropriate action to prevent infection and promote healing. If irritation persists, consult physician. |
| Ingestion | Plaster of paris hardens and, if ingested, may result in obstruction of the gut, especially the pyloric region. Drinking gelatin solutions or large volumes of water may delay setting. Due to the alkalinity caused by the portland cement content of this product, get medical attention immediately. |

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma. Pre-existing skin diseases such as, but not limited to, rashes and dermatitis. Some individuals with unusual hypersensitivity to hexavalent chromium (chromium+6) salts may exhibit an allergic response to portland cement, due to trace amounts of chromium in the portland cement. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers. Sensitized individuals may react immediately upon contact and others may first experience this effect after years of contact with portland cement products.

NOTES TO PHYSICIAN: Skin irritation may occur hours or days after the time of portland cement exposure. The main types of skin reactions seen are dermatitis of the hands, forearms, and feet seborrheic eczema, stasis dermatitis, and, occasionally exfoliative dermatitis.

SECTION 5 FIRE FIGHTING MEASURES

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| General Fire Hazards | Not expected to burn. | | |
| Extinguishing Media | Water or use extinguishing media appropriate for surrounding fire. | | |
| Special Fire Fighting Procedures | Wear appropriate personal protective equipment. See section 8. | | |
| Unusual Fire/ Explosion Hazards | None known | | |
| Hazardous Combustion Products | Above 1450° C - decomposes to calcium oxide (CaO) and sulfur dioxide (SO ₂). | | |
| Flash Point | Not Determined | Auto Ignition | Not Applicable |
| Method Used | Not Applicable | Flammability Classification | Not Applicable |
| Upper Flammable Limit (UFL) | Not Determined | | |
| Lower Flammable Limit (LFL) | Not Determined | Rate of Burning | Not Applicable |

SECTION 6 ACCIDENTAL RELEASE MEASURES



CONTAINMENT: No special precautions. Wear appropriate personal protective equipment. See section 8.

CLEAN-UP: Use normal clean up procedures. No special precautions.

DISPOSAL: Follow all local, state, provincial and federal regulations. Never discharge large releases directly into sewers or surface waters.

**SECTION 7
HANDLING AND STORAGE**

HANDLING: Avoid dust contact with eyes. Wear the appropriate eye protection against dust (See Section 8). Minimize dust generation and accumulation. Avoid breathing dust. Wear the appropriate respiratory protection against dust in poorly ventilated areas and if TLV is exceeded (see Sections 2 and 8). Use good safety and industrial hygiene practices.

STORAGE: Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities (see Section 10). As a dry powder, dew point conditions or other conditions causing presence of liquid will harden plaster of paris during storage.

**SECTION 8
EXPOSURE CONTROLS/PERSONAL PROTECTION**

| MATERIAL | WT% | TLV (mg/m ³) | PEL(mg/m ³) |
|-------------------------------|-----|--------------------------|--------------------------|
| Plaster of Paris (CaSO4•½H2O) | >60 | 10 | 15 (T) / 5 (R) |
| Portland Cement | >40 | 10 | 15 (T) / 5 (R) |
| Crystalline Silica | <1 | 0.025 (R) | 0.1 (R) |

(T)–Total; (R)–Respirable; (NE)-Not Established; (C)-Ceiling; (STEL)-Short-term exposure limit
(F)-Fume; (Du)-Dust; (M)-Mist
ppm-part per million; f/cc-fiber per cubic centimeter; mppcf- million particles per cubic foot

ENGINEERING CONTROLS: Provide ventilation sufficient to control airborne dust levels. If user operations generate airborne dust, use ventilation to keep dust concentrations below permissible exposure limits. Where general ventilation is inadequate, use process enclosures, local exhaust ventilation, or other engineering controls to control dust levels below permissible exposure limits.

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA-approved respirator equipped with particulate cartridges when dusty in poorly ventilated areas, and if TLV is exceeded. A respiratory program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. If engineering controls are not possible, wear a properly fitted NIOSH/MSHA-approved particulate respirator.

OTHER PERSONAL PROTECTIVE EQUIPMENT:

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| Eye/Face | Due to portland cement content in this product, wear safety glasses with side shields or goggles for eye protection to avoid irritation and severe chemical burns of the eye. Facilities storing or using this material should be equipped with an adequate number of eyewash facilities and safety showers. Contact lenses should not be worn when working with portland cement. |
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| Skin | Wear gloves and protective clothing to prevent repeated or prolonged skin contact. |
| General | Selection of Personal Protective Equipment will depend on environmental working conditions and operations. |

**SECTION 9
 PHYSICAL AND CHEMICAL PROPERTIES**

| | | | |
|------------------------------------|-------------------|--|--|
| Appearance | Gray to off white | Vapor Density (Air = 1) | Not Applicable |
| Odor | Low to no odor | Specific Gravity (H₂O = 1) | ~2.96 (Plaster of Paris), ~3.15 (Portland Cement) |
| Odor Threshold | Not Determined | Solubility in water (g/100g) | 0.15 - 0.40 (Plaster of Paris); 0.1-1(Portland Cement) |
| Physical State | Solid/ Powder | Partition Coefficient | Not Determined |
| pH @ 25 ° C | ~12 | Auto-ignition Temp | Not Determined |
| Melting Point | Not Applicable | Decomposition Temp | Not Determined |
| Freezing Point | Not Applicable | Viscosity | Not Applicable |
| Boiling Point | Not Applicable | Particle Size | Varies |
| Flash Point | Not Determined | Bulk Density | Not Determined |
| Evaporation Rate (BuAc = 1) | Not Applicable | Molecular Weight | Mixture |
| Upper Flammable Limit (UFL) | Not Determined | VOC Content | Zero |
| Lower Flammable Limit (LFL) | Not Determined | Percent Volatile | Zero |
| Vapor Pressure (mm Hg) | Not Applicable | | |

**SECTION 10
 CHEMICAL STABILITY AND REACTIVITY**

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| STABILITY | Stable. |
| CONDITIONS TO AVOID | Contact with incompatibles (see below). |
| INCOMPATIBILITY | Acids. Exposure to water and acids must be supervised because the reactions are vigorous and produce large amounts of heat. |
| HAZARDOUS POLYMERIZATION | None known. |
| HAZARDOUS DECOMPOSITION | Above 1450° C - calcium oxide (CaO) and sulfur dioxide (SO ₂). |

**SECTION 11
 TOXICOLOGICAL INFORMATION**

ACUTE EFFECTS: The sulfate ion has caused gastro-intestinal disturbance in humans following large oral doses. Limited studies involving the repeated inhalation of an (unspecified) calcium sulfate failed to identify any particular target organs in monkeys, rats and hamsters. No evidence of mutagenicity was found in Ames bacterial tests. Plaster of paris: Oral LD50 rat > 5000 mg/kg; Dermal LD50 – None Determined; Skin Irritation LD50 – None

Determined; Eye Irritation LD50– None Determined

CHRONIC EFFECTS / CARCINOGENICITY:

Plaster of Paris: Testing of dust from USG plaster of paris has not detected respirable crystalline silica.

Portland Cement: NIOSH conducted a portland cement worker study, “The Mortality of U.S. Portland Cement and Quarry Workers”, March 1985, which found “There is no excess mortality from all causes of death, lung cancer, non-malignant respiratory disease, or ischemic heart disease” among the workers studied.

Crystalline Silica: Exposures to respirable crystalline silica are not expected during the normal use of this product; however, actual levels must be determined by workplace hygiene testing. The weight percent of respirable crystalline silica may not have been measured in this product. Prolonged and repeated exposure to airborne free respirable crystalline silica can result in lung disease (i.e., silicosis) and/or lung cancer. The development of silicosis may increase the risks of additional health effects. The risk of developing silicosis is dependent upon the exposure intensity and duration.

In June, 1997, IARC classified crystalline silica (quartz and cristobalite) as a human carcinogen. In making the overall evaluation, the IARC Working Group noted that carcinogenicity in humans was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.

IARC states that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1).

**SECTION 12
ECOLOGICAL INFORMATION**

ENVIRONMENTAL TOXICITY: This product has no known adverse effect on ecology. Portland cement is expected to be toxic to fish due to its high alkalinity (pH > 12). Discharge of large quantities directly into waterways would be expected to cause significant fish kills.

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| Ecotoxicity value | Not determined. |
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**SECTION 13
DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL METHOD: Dispose of material in accordance with federal, state, and local regulations. Never discharge directly into sewers or surface waters. Consult with environmental regulatory agencies for guidance on acceptable disposal practices. Slurry may plug drains. Trace amounts of residue can be flushed to a drain, using plenty of water.

**SECTION 14
TRANSPORT INFORMATION**

U.S. DOT INFORMATION: Not a hazardous material per DOT shipping requirements. Not classified or regulated.

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| Shipping Name | Same as product name. |
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| Hazard Class | Not classified. |
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| UN/NA # | None. Not classified. |
| Packing Group | None. |
| Label (s) Required | Not applicable. |
| GGVSec/MDG-Code | Not classified. |
| ICAO/IATA-DGR | Not applicable. |
| RID/ADR | None. |
| ADNR | None. |

SECTION 15 REGULATORY INFORMATION

UNITED STATES REGULATIONS

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory.

| MATERIAL | WT% | 3 0 2 | 3 0 4 | 3 1 3 | CERCLA | CAA Sec. 112 | RCRA Code |
|---|-----|-------------|-------------|-------------|--------|-----------------|--------------|
| Plaster of Paris (CaSO ₄ •½H ₂ O) | >60 | NL | NL | NL | NL | NL | NL |
| Portland Cement | >40 | NL | NL | NL | NL | NL | NL |
| Crystalline Silica | <1 | NL | NL | NL | NL | NL | NL |

Key : NL = Not Listed

SARA Title III Section 302 (EPCRA) Extremely Hazardous Substances: Threshold Planning Quantity (TPQ)

SARA Title III Section 304 (EPCRA) Extremely Hazardous Substances: Reportable Quantity (RQ)

SARA Title III Section 313 (EPCRA) Toxic Chemicals: X= Subject to reporting under section 313

CERCLA Hazardous Substances: Reportable Quantity (RQ)

CAA Section 112 (r) Regulated Chemicals for Accidental Release Prevention: Threshold Quantities(TQ)

RCRA Hazardous Waste: RCRA hazardous waste code

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of Controlled Product regulations and the MSDS contains all the information required by the Controlled Products Regulations. All ingredients of this product are included in the Canadian Domestic Substances List (DSL).

| MATERIAL | WT% | IDL Item # | WHMIS Classification |
|---|-----|------------|-------------------------|
| Plaster of Paris (CaSO ₄ •½H ₂ O) | >60 | Not Listed | Not Listed |
| Portland Cement | >40 | Not Listed | E |
| Crystalline Silica | <1 | 1406 | D2A |

IDL Item#: Canadian Hazardous Products Act – Ingredient Disclosure List Item #

WHMIS Classification: Workplace Hazardous Material Information System

Risk and Safety Phrases defined by European Union Directive 67/548/EEC (Annex III and IV)

R-Phrase(s): R41 R34

S-Phrase(s): S24/25 S22 S2

**SECTION 16
 OTHER INFORMATION**

Label Information


Δ WARNING!

When mixed with water, this material hardens and becomes very hot – sometimes quickly. DO NOT attempt to make a cast enclosing any part of the body using this material. Failure to follow these instructions can cause severe burns that may require surgical removal of affected tissue or amputation of limb.

Portland cement is strongly alkaline. Direct contact can be corrosive and cause severe damage or chemical burns to the eyes and wet or moist skin. Avoid contact with eyes and skin. Wear eye protection, alkali-resistant protective gloves, long-sleeved shirts and pants to prevent direct contact. If eye contact occurs, immediately flush thoroughly with water for 30 minutes and seek medical advice. Inhalation of dust may be corrosive or cause chemical burns or irritation to nose, throat and respiratory tract. Avoid breathing dust. Use in a well-ventilated area or provide sufficient local ventilation. If dusty, wear a NIOSH/MSHA-approved dust respirator. Wash thoroughly with soap and water after use. Do not ingest. If ingested, call physician. Product safety information: (800) 507-8899 or www.usg.com.

KEEP OUT OF REACH OF CHILDREN.

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

| | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|---------------|---------------------|--|--------|---|---|--------------|--|---|-----------------|--|---|---------------------|--|---|--------------------|
| NFPA Ratings: | |  | HIMS Ratings: | | <table border="1"> <tr> <td>HEALTH</td> <td>*</td> <td>3</td> </tr> <tr> <td>FLAMMABILITY</td> <td></td> <td>0</td> </tr> <tr> <td>PHYSICAL HAZARD</td> <td></td> <td>1</td> </tr> <tr> <td>PERSONAL PROTECTION</td> <td></td> <td>E</td> </tr> </table> | HEALTH | * | 3 | FLAMMABILITY | | 0 | PHYSICAL HAZARD | | 1 | PERSONAL PROTECTION | | E | 0 = Minimal Hazard |
| HEALTH | * | | 3 | | | | | | | | | | | | | | | |
| FLAMMABILITY | | | 0 | | | | | | | | | | | | | | | |
| PHYSICAL HAZARD | | | 1 | | | | | | | | | | | | | | | |
| PERSONAL PROTECTION | | E | | | | | | | | | | | | | | | | |
| Health: | 3 | Health: | 3 | 1 = Slight Hazard | | | | | | | | | | | | | | |
| Fire: | 0 | Fire: | 0 | 2 = Moderate Hazard | | | | | | | | | | | | | | |
| Reactivity: | 0 | Reactivity: | 1 | 3 = Serious Hazard | | | | | | | | | | | | | | |
| | | | | | 4 = Severe Hazard | | | | | | | | | | | | | |

E – Safety glasses, gloves and dust respirator

Key/Legend

| | |
|-------|---|
| TLV | Threshold Limit Value |
| PEL | Permissible Exposure Limit |
| CAS | Chemical Abstracts Service (Registry Number) |
| NIOSH | National Institute for Occupational Safety and Health |
| MSHA | Mine Safety and Health Administration |
| OSHA | Occupational Health and Safety Administration |
| ACGIH | American Conference of Governmental Industrial Hygienists |
| IARC | International Agency for Research on Cancer |
| DOT | United States Department of Transportation |
| EPA | United States Environmental Protection Agency |
| NFPA | National Fire Protection Association |
| HMIS | Hazardous Materials Identification System |
| PPE | Personal Protection Equipment |



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| TSCA | Toxic Substances Control Act |
| DSL | Canadian Domestic Substances List |
| NDSL | Canadian Non-Domestic Substances List |
| SARA | Superfund Amendments and Reauthorization Act of 1986 |
| CAA | Clean Air Act |
| EPCRA | Emergency Planning & Community Right-to-know Act |
| RCRA | Resource Conservation and Recovery Act |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act of 1980 |
| UN/NA# | United Nations/North America number |
| CFR | Code of Federal Regulations |
| WHMIS | Workplace Hazardous Material Information System |
| | |

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