



MATERIAL SAFETY DATA SHEET
THAILAND GYPSUM PLASTER OF PARIS CASTING

Section 1: PRODUCT IDENTIFICATION

Product : Thailand Gypsum Plaster of Paris Casting
 Other names : Gypsum Plaster, Calcium Sulfate Hemi-hydrate
 Use : General casting work
 Formula : $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$

Section 2: HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

MATERIAL	%	TLV (mg/m ³)	PEL (mg/m ³)	CAS NUMBER
Plaster of Paris	> 95	10	15(T) / 5(R)	26499-65-0
Limestone	< 1.5	10	15(T) / 5(R)	1317-65-3
Crystalline Silica	< 5	0.1 (R)	0.1 (R)	14808-60-7

(T) = Total (R) = Respirable

All ingredients of this product are included in the US Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory. All components of this product are included in the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings: Health:0 Fire:0 Reactivity:0 Other:N/A
 HMIS Ratings: Health:0 Fire:0 Reactivity:0 Other:N/A

Personal Protection: Use eye and skin protection. Use NIOSH/MSHA – approved respiratory when necessary.

0=Minimal Hazard 1=Slight Hazard 2=Moderate Hazard 3=Serious Hazard
 4=Severe Hazard

Section 3: PHYSICAL / CHEMICAL CHARACTERISTICS

Appearance and Odor : Off white to gray powder; low odor.
 Melting Point : 1450°C – decomposes
 Solubility in Water : 0.15%
 Specific Gravity (H₂O=1) : 2.3 – 2.6
 pH : 8.0-9.0
 Hardening Time : Varies. Check usage and/or product specification data for each product.
 Storage : Keep away from moisture

Section 4: FIRE AND EXPLOSION HAZARD DATA

Extinguishing Media : Use extinguishing media appropriate for surrounding fire
 Special Fire Fighting Procedure : None
 Unusual Fire and Explosion Hazards : None
 Flash Point (Method Used) : Non-combustible

This product can release nuisance dust in handling or during use. Eye, skin, nose, throat, and upper respiratory irritation may occur with prolonged dust exposures.

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Section 5: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

ACUTE:

EYES: Direct contact can cause mechanical irritation of eyes. If burning, redness, itching, pain or other symptoms persist or develop, consult physician.

SKIN: When mixed with water, this material hardens and then slowly becomes hot. 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.

Direct, prolonged or repeated contact with the skin may cause irritation. Rubbing of this product against the skin can result in abrasions. Rinse with water until free of material to avoid abrasions, and then wash skin thoroughly with mild soap and water.

INHALATION: Inhalation of dusts from this product may irritate the nose, throat, lungs, 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.

INGESTION: Unlikely to occur, but may cause gastric disturbances if swallowed. Plaster of Paris is nontoxic, however, ingestion of a sufficient quantity could lead to mechanical obstruction of the gut, especially the pyloric region. See Emergency and First Aid – Ingestion below.

CHRONIC: This material displays no specific toxic properties.

INHALATION: Prolonged and repeated exposure to respirable crystalline silica result in lung disease (i.e., silicosis) and/or lung cancer.

EYES: None known.

SKIN: None known.

INGESTION: No known effects.

EMERGENCY AND FIRST AID PROCEDURES:

EYES: Irrigate with eyewash solution or clean water, holding the eyelids apart for at least 10 minutes. Obtain medical attention. If irritation persists, consult physician.

SKIN: Remove contaminated clothing. Wash skin with mild soap and water. A hand lotion may be used to treat dry skin areas. If skin has become cracked, take appropriate action to prevent infection and promote healing.

INHALATION: No harmful effects expected. No specific recommendations. If gastric disturbance occurs, call physician. This product contains gypsum plaster. Plaster of Paris hardens when wetted and, if ingested, may result in obstruction of the gut, especially the pyloric region.

FURTHER MEDICAL TREATMENT: Unlikely to be required but if necessary, treats symptomatically.

TARGET ORGANS: Eyes, skin, and respiratory system

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung diseases such as, but not limited to, bronchitis, emphysema and asthma.

PRIMARY ROUTES OF ENTRY: Inhalation: eyes and/or skin contact.

Section 6: REACTIVITY DATA

STABILITY : Stable

INCOMPATIBILITY : Acids

HAZARDOUS POLYMERIZATION : Will not occur

HAZARDOUS DECOMPOSITION : Above 1450° C could produce CaO and SO₂.

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Section 7: SPILL OR LEAK PROCEDURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Sweep up material from spillage into waste container for disposal, avoid creating excessive dust. If washed down, may plug drains. Ensure complete removal as wet calcium sulfate may present a slipping hazard and subsequently can set to a concrete like substance. Spillage or uncontrolled discharges into watercourses must be altered to the National Rivers Authority or other appropriate regulatory body. If already mixed with water, scrape up and place in container. Avoid dusting conditions, minimize airborne dust. Wear appropriate protective equipment.

WASTE DISPOSAL METHOD:

Dispose of material in accordance with Federal, State and local regulations. Slurry may plug drains.

Section 8: SPECIAL PROTECTION INFORMATION

No TLV assigned to this mixture, see Ingredients Section. Minimize exposures in accordance with good hygiene practice.

RESPIRATORY PROTECTION:

Not typically necessary under normal conditions of use. Provide general ventilation and local exhaust ventilation to meet TLV requirements of individual ingredients and to control dusting conditions. Avoid creating dust. Wear a NIOSH/MSHA-approved dust respirator in poorly ventilated areas and/or if TLV is exceeded.

VENTILATION:

Ventilated to keep exposures below TLV. General ventilation is expected to be satisfactory. Use local exhaust ventilation if necessary to control dust.

PERSONAL PROTECTIVE EQUIPMENT:

Gloves or protective clothing are usually not necessary but may be desirable in specific working situations. Wear gloves and protective clothing to prevent repeated or prolonged skin contact. Wear eye protection (safety glasses or goggles) to avoid articulate irritation of the eye.

Section 9: PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE AND ODOR	: Off white to gray powder; No distinct odor.
MELTING POINT	: 1450° C - decomposes
SOLUBILITY IN WATER	: 0.15%
EVAPORATION RATE	: Not Applicable
SPECIFIC GRAVITY (H ₂ O = 1)	: 2.32
pH	: 7.0 – 8.0
STORAGE	: Keep away from moisture.

Section 10: STABILITY & REACTIVITY

STABILITY	: Stable
INCOMPATIBILITY	: Acids
HAZARDOUS POLYMERIZATION	: Will not occur
HAZARDOUS DECOMPOSITION	: Above 1450° C could produce CaO and SO ₂ .

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Section 11: TOXICOLOGICAL INFORMATION

TOXICOLOGY DATA :

Not available on this product, but anticipated to be very low with LD50 >5000 mg/kg.

Section 12: ECOLOGICAL INFORMATION

ECO-TOXICITY :

The physical and chemical nature of the product, and toxicological data on ingredients, indicate that this product is a relatively low risk.

PERSISTENCE AND DEGRADABILITY :

Product is persistent and would have a low degradability.

Section 13: DISPOSAL

DISPOSAL CONSIDERATIONS :

Pickup and reuse clean materials. Waste should be placed in containers and disposed of with other construction waste in accordance with local authority guidelines. Measures should be taken to prevent dust generation during disposal and exposure and personal precautions should be observed (see Section 8). Where applicable, dispose of bags in an approved landfill or incinerator

Section 14: TRANSPORT INFORMATION

HAZARDOUS MATERIALS DESCRIPTION / PROPER SHIPPING NAME:

Not hazardous under U.S. Department of Transportation (DOT) regulations.

HAZARD CLASS

: Not applicable.

HAZCHEM CODE / IDENTIFICATION NUMBER

: Not applicable.

REQUIRED LABEL TEXT

: Not applicable.

HAZARDOUS SUBSTANCES / REPORTABLE QUANTITIES (RQ)

: Not applicable.

MARINE POLLUTANT

: No pollutant.

Section 15: OTHER REGULATORY INFORMATION

POISONS SCHEDULE : Non Scheduled

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**THAILAND GYPSUM PLASTER OF PARIS CASTING
TECHNICAL DATA SHEET**

PRODUCT DESCRIPTION

Casting plaster is a hemihydrate unformulated plaster used in Agriculture as a source of Calcium. It can also be used as an additive or a binder in several application and also in ceramics to produce working moulds for the slip casting of tableware. It can also be used in decoration and reparation gypsum item.

PRODUCT BENEFIT

- + Unformulated plaster
- + High purity

OTHER MARKETS

Ceramics

APPLICATIONS

Agriculture and Environment, Artistic, Interior Design, Plaster based construction elements, Tableware

TECHNICAL INFORMATION

Plaster to Water Ratio	
Plaster to Water Ratio (by weight)	1.47 : 1
Water to plaster ratio (by weight)	68%
Plaster to water mix ratio (by weight)	100 / 68
Chemical Properties	
Chemical Name	Calcium sulphate hemihydrate
Chemical Composition	CaSO ₄ •1/2H ₂ O
Minimum gypsum purity %	> 92
Colour	off – white
Setting Parameters	
Initial setting time (minutes)	10 – 16
Final setting time (minutes)	< 50
Mechanical Properties	
Flexural strength (MPa)	> 4.5
Physical Properties	
Particle Size (% weight retained)	< 6.0% at 63µm < 1% at 90µm
Loose bulk density (kg/m ³)	620 - 720

INSTRUCTIONS FOR USE

The recommended plaster to water ratio is between 1.40 : 1 and 1.55 : 1, with a mixing time of approx.. 2 to 4 minutes, depending on batch size.

Mixing utensils should always be clean and free from set plaster. Use distilled water only. For consistent results, attention must be given to the correct proportioning and mixing of the plaster and water.

Add the weighed quantity of plaster slowly into the measured volume of water and allow to soak. Do not mix fresh plaster with that which has been mixed with some time previously.

Changes to plaster to water ratio will influence product performance, particularly setting time and strength.

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PACKAGING AND SHELF LIFE

STORAGE

	Packaging available	Shelf Life (month)
Bag	25 kg	6
Bulk Bag	1.05 T	6

Plaster based products are not recommended for conditions where they are likely to be located externally or in any way subjected to weathering or excessive dampness.

When stored under dry conditions and in its original packaging, the product will have a specified shelf life that commences from the date of manufacture that is displayed on each sack. Shelflife depends on the packaging type. For those products where a defined 'best before' date is applicable, BBE (Best Before End) followed by the date will be displayed on each sack.

Absorption of moisture can result in changes to physical properties, including a reduction in the set strength of plasters and also in lengthening of setting time.

Gypsum minerals can be affected by absorption of moisture and may change physical properties.

To help protect the product during use, open or part used bags should be carefully folded and closed. Each bag is date stamped and stocks should be rotated so that the oldest material is used first.

NOTIFICATION

The plaster to water ratios quoted are those used in the standard test methods and are not necessarily those used in practice. The precise consistency to use will need to be adjusted to suit the individual application.

This literature cancels and replaces any previous document. All information given is provided in good faith and may be subject to change.

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