MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	**TRONOX® Gypsum**
Version #	01
Revision date	09-29-2009
CAS #	Mixture
Product Code	Calcium sulfate dihydrate
MSDS Number	S-3009
Product use	Manufacture of gypsum board; cement additive
Manufacturer information	Tronox LLC 3301 NW 150th Street Oklahoma City, OK 73134 US ChemProdSteward@tronox.com 1-405-775-5000 (24-hours)
Emergency	CHEMTREC 1-800-424-9300

2. Hazards Identification

Physical state	Solid.
Appearance	Crystalline.
Emergency overview	CAUTION May cause eye, skin and respiratory tract irritation.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Skin contact. Eye contact.
Eyes	Dust may irritate the eyes.
Skin	Dust may irritate skin. Skin irritation occurs on contact with moist or wet skin.
Inhalation	May cause respiratory tract irritation. Dust may irritate throat and respiratory system and cause coughing.
Ingestion	May cause discomfort if swallowed.
Target organs	Eyes. Skin. Respiratory system
Chronic effects	Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases.
Signs and symptoms	Upper respiratory tract irritation. Coughing. Irritation of eyes and mucous membranes. Skin irritation.
Potential environmental effects	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Calcium sulfate dihydrate	10101-41-4	70 - 80
Calcium carbonate	1317-65-3	< 5
Water	7732-18-5	Balance

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye contact	Dust in the eyes: Do not rub eyes. Remove contact lenses, if present and easy to do. Rinse with water. Get medical attention if irritation develops or persists.
Skin contact	Flush skin thoroughly with water. Get medical attention if irritation develops or persists.

Inhalation Move to fresh air. Get medical attention if any discomfort continues.

Ingestion Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Never give anything by mouth to an unconscious person. If ingestion of a large amount does occur, call a poison control center immediately.

Notes to physician Treat symptomatically.

General advice Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties This product is not flammable.

Extinguishing media

Suitable extinguishing media Use fire-extinguishing media appropriate for surrounding materials.

Protection of firefighters

Protective equipment and precautions for firefighters Firefighters should wear full protective clothing including self contained breathing apparatus. Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

Specific methods In the event of fire, cool tanks with water spray. Move container from fire area if it can be done without risk.

6. Accidental Release Measures

Personal precautions Avoid inhalation of dust and contact with skin and eyes. Wear appropriate protective equipment and clothing during clean-up. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment Collect and dispose of spillage as indicated in Section 13 of the MSDS. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up Avoid dust formation. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container. For waste disposal, see Section 13 of the MSDS.

Other information Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling Avoid inhalation of dust and contact with skin and eyes. Use only with adequate ventilation. Use Personal Protective Equipment recommended in section 8 of the MSDS. Wash thoroughly after handling. Observe good industrial hygiene practices.

Storage Store in tightly closed original container in a dry and cool place. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value	Form
Calcium sulfate dihydrate (10101-41-4)	TWA	10 mg/m3	Inhalable fraction.

U.S. - OSHA

Components	Type	Value	Form
Calcium carbonate (1317-65-3)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
	TWA	15 mg/m3	Total dust.
		5 mg/m3	Respirable fraction.
Calcium sulfate dihydrate (10101-41-4)	PEL	15 mg/m3	Total dust.
		5 mg/m3	Respirable fraction.
	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

Canada - Alberta

Components	Type	Value
Calcium carbonate (1317-65-3)	TWA	10 mg/m3

Components	Type	Value
Calcium sulfate dihydrate (10101-41-4)	TWA	10 mg/m3

Canada - British Columbia

Components	Type	Value	Form
Calcium carbonate (1317-65-3)	STEL	20 mg/m3	Total dust.
	TWA	10 mg/m3	Total dust.
		3 mg/m3	Respirable fraction.
Calcium sulfate dihydrate (10101-41-4)	STEL	20 mg/m3	Total dust.
	TWA	10 mg/m3	Total dust.
		3 mg/m3	Respirable fraction.

Canada - Ontario

Components	Type	Value	Form
Calcium sulfate dihydrate (10101-41-4)	TWA	10 mg/m3	Inhalable

Canada - Quebec

Components	Type	Value	Form
Calcium carbonate (1317-65-3)	TWA	10 mg/m3	Total dust.
Calcium sulfate dihydrate (10101-41-4)	TWA	10 mg/m3	Total dust.
		5 mg/m3	Respirable dust.

Mexico

Components	Type	Value
Calcium carbonate (1317-65-3)	STEL	20 mg/m3
	TWA	10 mg/m3
Calcium sulfate dihydrate (10101-41-4)	TWA	10 mg/m3

Engineering controls Ventilate as needed to control airborne dust. Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of dust.

Personal protective equipment

Eye / face protection Wear dust-resistant safety goggles where there is danger of eye contact.

Skin protection Risk of contact: Wear suitable gloves. Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection When engineering controls are not sufficient to lower exposure levels below the applicable exposure limit, use a NIOSH approved respirator for dusts. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever work place conditions warrant a respirator's use. Seek advice from local supervisor.

General hygiene considerations Do not breathe dust. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance Crystalline.

Color White. to. Tan.

Odor None.

Odor threshold Not available.

Physical state Solid.

Form Solid.

pH 6.5 (as slurry)

Melting point loses water of hydration @ 325°C

Freezing point Not available.

Boiling point Not available.

Flash point Not available.

Evaporation rate	Not available.
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	2.32 @4°C
Solubility (water)	0.23% by wt @ 25°C
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Bulk density	145 lb/ft³

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	None known.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Local effects	Dusts may irritate the respiratory tract, skin and eyes.
Sensitization	Not a skin sensitizer.
Chronic effects	Frequent inhalation of dust over a long period of time increases the risk of developing asthma, chronic lung diseases, and skin irritation.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Epidemiology	Not available.
Mutagenicity	Not available.
Neurological effects	Not available.
Reproductive effects	Not available.
Teratogenicity	Not available.
Further information	No other specific acute or chronic health impact noted.

12. Ecological Information

Ecotoxicity	The product is not expected to be hazardous to the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	The degradability of the product has not been stated.
Bioaccumulation / Accumulation	No data available on bioaccumulation.
Mobility in environmental media	No data available.

13. Disposal Considerations

Waste codes	Not regulated.
Disposal instructions	Dispose of this material and its container to hazardous or special waste collection point. Do not allow this material to drain into sewers/water supplies.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity (lbs)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance

No

Section 311 hazardous chemical

Yes

Drug Enforcement Agency (DEA)

Not controlled

WHMIS status

Non-controlled

WHMIS labeling

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Massachusetts RTK - Substance: Listed substance

Calcium carbonate (CAS 1317-65-3) Listed.
Calcium sulfate dihydrate (CAS 10101-41-4) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Calcium carbonate (CAS 1317-65-3) Listed.
Calcium sulfate dihydrate (CAS 10101-41-4) Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.
Issue date	09-29-2009