



MATERIAL SAFETY DATA SHEET

Date of Preparation

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Emergency Telephone Number

"CHEMTREC" - 1-800/424-9300

SECTION I -- PRODUCT IDENTIFICATION

Chemical Name & Synonyms: Chrysotile Asbestos

Trade Name & Synonyms: Asbestos

Chemical Family: Fibrous Mineral Silicates

Typical Formula: $Mg_3(Si_2O_5)(OH)_4$

SECTION II -- HAZARDOUS INGREDIENTS

<u>Ingredient</u>	<u>Percent</u>	<u>Occupational Exposure Limits</u>		<u>Vapor Pressure</u>
		<u>PEL</u>	<u>TLV</u>	
Chrysotile Asbestos	Approx. 100%	2 fibres/cc 8 hr. TWA	Chrysotile- 2.0 fibres/cc	N.A.
C.A.S. Number: #12001-29-5		Ceiling Con- centration 10 fibres/cc	ACGIH, Documentation of TLVs at 27	
U.N. Shipping Number: 2590 (white asbestos)		OSHA Standard at 29 CFR 1910.1001		
H.M. I.S. Rating Numbers: Health-*(Possible Chronic Effects) Flammability-0 Reactivity-0		Fibres measured are those longer than 5 microns.		

SECTION III -- PHYSICAL DATA

Boiling Range: N/A	Vapor Density: N/A
Volatile Volume: N/A	Evaporation Rate Faster/Slower than Ether: N/A
Specific Gravity ($H_2O=1$): 2.4-2.6	Wt/Gal: Variable
Appearance and Odor: White fibrous dry material-no odor	

SECTION IV -- FIRE AND EXPLOSION HAZARD DATA

Flammability Classification: OSHA: N/A
(Non-flammable) DOT: N/A
Flash Point: N/A LEL: N/A
Extinguishing Media: (Use that which is appropriate for surrounding fire)
Foam "Alcohol" Foam CO₂ Dry Chemical Water Fog Other
Unusual Fire and Explosion Hazards: None
Special Firefighting Procedures: None

Section V -- HEALTH HAZARD DATA

Effects of Overexposure:

- Acute - May cause eye and/or skin irritation.
- Chronic - Overexposure to asbestos can cause asbestosis, a scarring of the lungs. Pleural thickening, effusion, and plaques are nondisabling conditions, seen separately or together, that have been associated with asbestos exposure. The International Agency for Research on Cancer (IARC) has determined that there is sufficient evidence for the carcinogenicity of asbestos in humans.

Signs and Symptoms of Overexposure:

Asbestosis is associated with symptoms of labored breathing, chest pain, weakness and chest tightness. Symptoms are not usually manifest until 15-20 years after exposure.

Primary Route(s) of Entry: Dermal Inhalation Ingestion

Emergency and First Aid Procedures:

Remove asbestos slivers from skin promptly. In case of eye irritation, gently rinse with water. If irritation persists, get medical help.

Special Note: A medical surveillance program must be established for asbestos-exposed persons in accordance with the requirements of the Occupational Safety and Health Administration's standard for asbestos (29 CFR Part 1910.1001).

SECTION VI -- REACTIVITY DATA

Stability: Stable

Hazardous Polymerization: Will Not Occur

Hazardous Decomposition Products: None

Conditions to Avoid: Avoid creating and breathing dust.

Incompatibility (Materials to Avoid): None

SECTION VII -- SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled:

Avoid creating dust. Collect dust by HEPA vacuum or in the wet state (wet sweeping, wet wiping) to prevent emission of airborne fibres.

Waste Disposal Method: Found at 40 CFR

§ 61.152 Standard for waste disposal for manufacturing demolition, renovation, spraying, and fabricating operations.

Each owner or operator of any source covered under the provisions of §§ 61.144-61.149 shall:

(a) Deposit all asbestos-containing waste material at waste disposal sites operated in accordance with the provisions of § 61.156; and

(b) Discharge no visible emissions to the outside air during the collection, processing (including incineration), packaging, transporting, or deposition of any asbestos-containing waste material generated by the source, or use one of the disposal methods specified in paragraphs (b)(1), (2), or (3) of this section, as follows:

(1) Treat asbestos-containing waste material with water;

(i) Mix asbestos waste from control devices with water to form a slurry; adequately wet other asbestos-containing waste material; and

(ii) Discharge no visible emissions to the outside air from collection, mixing, and wetting operations, or use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air; and

(iii) After wetting, seal all asbestos-containing waste material in leak-tight containers while wet; and

(iv) Label the containers specified in paragraph (b)(1)(iii) as follows:

CAUTION

Contains Asbestos-

Avoid Opening or

Breaking Container

Breathing Asbestos is hazardous
to Your Health

Alternatively, use warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.1001(g)(2)(ii).

(2) Process asbestos-containing waste material into nonfriable forms:

(i) Form all asbestos-containing waste material into nonfriable pellets or other shapes; and

(ii) Discharge no visible emissions to the outside air from collection and processing operations, or use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) Use an alternative disposal method that has received prior approval by the Administrator.

§ 61.156 Active waste disposal sites.

To be an acceptable site for disposal of asbestos-containing waste material under §§ 61.151 and 61.152, an active waste disposal site must meet the requirements of this section.

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) of this section must be met.

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements of 51 cm x 36 cm (20" x 14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend	Minimum
Asbestos Waste Disposal Site Do Not Create Dust	2.5 cm (1 inch) Sans Serif Gothic or Black.
Breathing Asbestos is Hazardous to Your Health	1.8 cm (¾ inch) Sans Serif Gothic or Black. 14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.

(c) Rather than meet the no visible emission requirement of paragraph (a) of this section, an active waste disposal site would be an acceptable site if at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period is covered with either:

(1) At least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or

(2) A resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. This agent must be used as recommended for the particular dust by the manufacturer of the dust suppression agent. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, waste crankcase oil is not considered a dust suppression agent.

(d) Rather than meet the no visible emission requirement of paragraph (a) of this section, an active waste disposal site would be an acceptable site if an alternative control method for emissions that has received prior approval by the Administrator is used.

(Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

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SECTION VIII -- SAFE HANDLING AND USE INFORMATION

Respiratory Protection:

Reusable or single-use air purifying respirator -- for exposures which do not exceed the PEL by more than 10X.

Powered air-purifying respirator -- for exposures more than 10X, but less than 100X, the PEL.

Type "C" continuous flow or pressure-demand, supplied-air respirator -- for exposures more than 100X the PEL.

All respirators must be NIOSH/MSHA approved.

Ventilation: Local ventilation if engineering controls are inadequate.

Protective Gloves: (See "Other Protective Equipment")

Eye Protection: (See "Other Protective Equipment")

Other Protective Equipment:

If the ceiling concentration limit is exceeded, clothing providing whole body covering shall be supplied and its use required.

Hygienic Practices: Do not create or breathe dust.
Do not dry sweep or use air hose for cleaning.
Do not take protective equipment or clothing home.
(See attached pamphlet, "Recommended Practices for Handling Asbestos Fiber".)

SECTION IX -- SPECIAL PRECAUTIONS

Precautions to be Taken in Handling and Storing:

Use no hooks in loading and unloading.

Protect containers from damage.

Do not open containers in a manner that can release dust without providing proper enclosure or control measures.

Use dust suppression control measures, such as ventilation or wet-working, at all stages of asbestos handling, use and disposal.

Follow good housekeeping practices, such as wet-wiping dusty surfaces, to prevent accumulation of asbestos-containing dust.

Avoid inhalation of asbestos.

Other Precautions: Smoking greatly increases risk to health.

While the information and recommendations set forth herein are believed to be accurate as of the date hereof, CALAVERAS ASBESTOS, LTD. MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

Recommended Practices for Handling Asbestos Fiber

Protection from fire, absorption of heat from friction, high tensile strength as a reinforcing material, resistance to corrosion and insulation from heat, cold and noise are among the properties of asbestos that result in its use in hundreds of industrial applications and home products.

Asbestos is the name given to a group of hydrated silicate minerals that are characterized by fibrous crystallization. Though asbestos is fairly common to the earth's crust, not all deposits are of commercial value. Because asbestos is fibrous and, in a certain range of sizes, can enter the lungs, maximum care should be taken to avoid exposure to asbestos dust and the hazards to health that can result.

GENERAL PRECAUTIONS

In all stages of handling — packaging, transporting, unloading, storing, and in-part moving — asbestos fiber bags should be handled carefully and in such a manner as to prevent damage of bags and the generation of dust.

Damaged bags should be immediately repaired, resealed or put into closed receptacles. Any spillage of asbestos fiber should be cleaned up immediately — either by vacuum equipment or, after thoroughly wetting, by sweeping — and should be deposited in suitable closed receptacles.

Consult and observe OSHA regulations governing asbestos in the workplace; EPA rules on discharge to the ambient air; and other local codes, rules or regulations controlling the handling and use of asbestos fiber.

UNLOADING

Unitized loads should be lifted intact to and from holds of ships, and off and on land transport by forklift trucks or other suitable handling equipment.

Care should be taken to avoid puncturing the asbestos fiber bags during unloading from ships, railroad cars, trucks or other modes of transportation. Hooks or other sharp instruments should not be used. Loose fiber accumulated during transit should be picked up by vacuum cleaner before unloading.

STORAGE

For storage, fiber bags should be stacked and moved with care to avoid breakage; protected from puncture by moving vehicles; and, if possible, should be isolated from traffic in the warehouse and covered to prevent dust generation. To prevent deterioration of stored bags, the principle of first-in, first-out should be followed.

HANDLING

Maximum possible enclosure and fully effective dust control systems should be provided at all stages of in-plant handling where dust is created, such as in bag opening, fiber dumping and bag disposal operations. Loose fiber should be cleaned from work areas by vacuum cleaner, or after thoroughly wetting by sweeping, and then deposited in covered receptacles.

PROTECTIVE EQUIPMENT

Wearing of respiratory equipment approved for protection against asbestos dust should be required at all stages of asbestos fiber handling where quantities of dust are generated which cannot be kept within the permissible exposure limits by dust control equipment or other methods.

TRANSPORT

Where the use of asbestos requires the transport of loose fiber in open carts or buggies, covers should be used to prevent spilling and dust generation.

WASTE MATERIALS

Waste materials, such as collected dust and empty fiber bags, should be placed in special close receptacles and disposed of in such a manner as to prevent the release of dust. Safety practices outlined above in the **HANDLING** and **PROTECTIVE EQUIPMENT** sections should be followed during these operations.

All dust from exhaust systems should be collected and safely disposed of, being careful not to release dust into the outside air. Particular attention should be paid to the protection of employees whose job is to dispose of collected dust from fabric filter dust collection and similar cleaning operations.