



# Material Safety Data Sheet

## Section 1 - Product Identification and Use

Product Identifier: **PYROLUSITE**

Common Name: Solid Manganese Dioxide (20x40; 8x20 Mesh)

Product Use: Water filtration & treatment

MSDS Number: BCG

Manufacturer's Name:  
Layne Christensen Company  
97 Chimney Rock Road  
Bridgewater, NJ 07302  
Emergency Phone (732) 469-8720

Supplier's Name:  
AWI (Anthratech Western Inc.)  
4450 – 46 Avenue, SE  
Calgary, Alberta T2B 3N7  
Emergency Phone (403) 255-7377

\* Pyrolusite is manufactured by Layne Christensen Company and is distributed by AWI.

## Section 2 - Hazardous Ingredients

MANGANESE DIOXIDE:	75 - 80%	C.A.S. 1313-13-9
QUARTZ SILICA:	3 - 5%	C.A.S. 14808-60-7

## Section 3 - Physical Data

Boiling Point:	N/A	Freezing Point:	Solid at STP
Vapour Pressure:	N/A	Melting Point:	>1538 C
Evaporation Rate:	N/A	Water Solubility:	Slight
Bulk Density:	115 lbs/ft <sup>3</sup>	pH (10% aqueous slurry):	9-10
% Volatile by vol:	1-2% H <sub>2</sub> O		
Appearance and Odour:	A uniform, brownish-black, granular material. Odourless.		

## Section 4 - Fire and Explosion Data

Flammable Properties: Material will not burn. Although not combustible, this material is a strong oxidizing agent, which liberates oxygen during thermal decomposition. It may increase the burning rate of combustibles with flare-burning effect. It may cause reignition after a fire is extinguished.

Extinguishing Media: Use dry chemical or CO<sub>2</sub> to extinguish fires involving this material.

Protection for Fire-fighters: Material should be kept out of eyes and skin. As in any fire, wear self-contained breathing apparatus pressure-demand. MSHA/NIOSH (approved equivalent) and full protective gear. Do not release runoff from fire control methods to sewers or waterways.

## Section 5 - Reactivity Data

Stability:	Stable under normal conditions of storage.
Materials to Avoid:	Pyrolusite is a powerful oxidizer, hence it should not be heated or rubbed with organic matter or other easily oxidizable substances, e.g., sulphur, sulfides, phosphides, hypophosphides, etc. Material is flammable by chemical reaction. Incompatible with hydrogen peroxide and sodium peroxide. Keep away from heat and flammable materials.

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## Section 6 - Toxicological Properties

Primary Route of Exposure:	Inhalation
Eye Contact:	Contact with particulate may cause slight to moderate eye irritation. Abrasive action of dust particulate can cause eye damage.
Skin Contact:	Prolonged or repeated contact may cause slight to moderate skin irritation.
Inhalation:	Overexposure by inhalation of airborne particulate, dust, or fumes is irritating to the nose, throat, and respiratory tract. Inhalation of excessive levels of dust or fumes may be harmful.
Ingestion:	Ingestion is an unlikely route of exposure; no hazard in normal industrial use. Small amounts (<tablespoon) swallowed during normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. If large quantity is ingested, it may cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting, abdominal pain and diarrhea.
Acute Effects of Exposure:	Excessive, short-term exposure to airborne mineral dusts and particulate may cause upper respiratory and eye irritation. Exposure via inhalation to high concentration of dusts containing manganese compounds for as little as three months have been known to affect the central nervous system.
Chronic Effects of Exposure:	Excessive, long-term inhalation of airborne mineral dusts and particulate may contribute to the development of bronchitis, reduced breathing capacity and may lead to the increased susceptibility to lung disease.
Manganese Poisoning:	Chronic inhalation of manganese compounds usually begins with complaints of languor and sleepiness. This is followed by weakness in the legs and the development of stolid, mask like faces. The patient speaks with a slow monotonous voice. Then muscular twitching appears, varying from a fine tremor of the hands to coarse, rhythmical movements of the arms, legs and trunk. There is a slight increase in tendon reflexes, ankle and patellar clonus and a typical Parkinsonian slapping gait.
Signs and Symptoms of Exposure:	Tearing of the eyes, burning sensation in the throat, cough and chest discomfort.
Conditions Aggravated by Exposure:	Inhalation of mineral dust may aggravate pre existing chronic lung conditions such as, but not limited to bronchitis, emphysema and asthma.

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## Section 7 - Preventative Measures

Containment:	Product is a dry solid (granular or powder) and not readily soluble in water. However, prevent spilled product from entering streams, water bodies and wastewater systems.
Cleanup:	Vacuum or sweep up dry material and place in a container for reuse. Avoid creating excessive airborne dust. Cleanup personnel need to wear approved respiratory protection, gloves, long sleeved clothing and goggles to prevent irritation from contact and inhalation.
Storage:	Store in a cool, dry area. Keep container closed when not in use.
Handling:	Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with skin and eyes.
Personal Protective Equipment:	Wear protective safety goggles when dust generation is likely. Wear clothing sufficient to cover the skin, safety shoes and leather gloves for hand protection against dry material. Use NIOSH/MSHA approved respiratory protection when concentrations are above exposure limit value.

## Section 8 - First Aid Measures

Inhalation:	If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop. If not breathing, give artificial respiration or give oxygen by trained personnel, and get medical attention.
Eyes:	Remove material by immediately flushing eyes with clean, flowing, lukewarm water (low pressure) for at least 15 minutes. Get medical attention if pain or irritation persists.
Skin Contact:	Immediately wash affected area with mild soap and water to remove any dust adhering to the skin. Get medical attention if irritation develops or persists.
Ingestion:	If ingested in sufficient quantity and victim is conscious, give 1-2 glasses of water or milk. Never give anything by mouth to an unconscious person. Seek medical attention.

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## Section 9 - Preparation & Date of MSDS

Prepared by:	Craig Morris (Safety Officer) AWI, 4450-46 Ave SE; Calgary, AB T2B 3N7
Telephone Number:	[403] 255-7377
Date Prepared:	January 14, 2013

The information contained herein is accurate to the best of our knowledge. However, data, safety standards and government regulations are subject to change, and conditions of handling, use or misuse of this product are beyond our control. Users should satisfy themselves that they are aware of all of the current data relevant to their particular use.