



MATERIAL SAFETY DATA SHEET

Effective Date: 1/1/09

Replaces: 9/1/05

1 - IDENTIFICATION		
CHEMICAL NAME Expanded Shale	CHEMICAL FORMULA Not Applicable	MOLECULAR WEIGHT Not Applicable
TRADE NAME Norlite		
SYNONYMS Lightweight Aggregate		DOT IDENTIFICATION NO. None

2 - PRODUCT AND COMPONENT DATA			
COMPONENT(S) CHEMICAL NAME	CAS NO.	% (APPROX.)	EXPOSURE LIMITS
Shale*		100	
* Composition varies naturally. Typically contains quartz (crystalline silica)	14808-60-7	8.5	See Section 6

3 - PHYSICAL DATA	
APPEARANCE AND ODOR Angular particles, ranging in size from dust to 2" - no odor	SPECIFIC GRAVITY 1.25 - 1.7
BOILING POINT (At 1 Atm.) Not Applicable	VAPOR DENSITY IN AIR (Air = 1) Not Applicable
VAPOR PRESSURE (mm Hg @ 20 C) Not Applicable	% VOLATILE, BY VOLUME (@100 F) Not Applicable
EVAPORATION RATE (At 1 Atm. and 25 C: n-butyl acetate=1) Not Applicable	SOLUBILITY IN WATER Negligible

4 - REACTIVITY DATA	
STABILITY Stable	CONDITIONS TO AVOID Avoid contact with incompatible materials (see below)
INCOMPATIBILITY (Materials to avoid) Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride	
HAZARDOUS DECOMPOSITION PRODUCTS Silica-containing respirable dust particles may be generated by handling.	
HAZARDOUS POLYMERIZATION Not known to polymerize	

CHRONIC TOXICITY

Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, a lung disease. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased. Symptoms of silicosis may include, but are not limited to, the following: shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume, right heart enlargement and/or failure. Smoking may increase the risk of developing lung disorders, including emphysema and lung cancer. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Respirable dust containing newly broken silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken particles of silica.

There are reports in literature suggesting that excessive crystalline silica exposure may be associated with adverse health effects involving the kidney, scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) and other autoimmune disorders. However, this evidence has been obtained primarily from case reports involving individuals working in high exposure situations or those who have already developed silicosis; and therefore, this evidence does not conclusively prove a causal relationship between silica or silicosis and these adverse health effects. Several studies of persons with silicosis also indicate an increased risk of developing lung cancer, a risk that increases with the duration of exposure. Many of these studies of silicotics do not account for lung cancer confounders, especially smoking.

Expanded Shale is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), the American Conference of Governmental Industrial Hygienists (ACGIH); or the Occupational Safety and Health Administration (OSHA). In October 1996, an IARC Working Group designated crystalline silica, a component of this product, as carcinogenic (Group 1). The NTP has listed crystalline silica as a known human carcinogen. The ACGIH classifies crystalline silica as a suspected human carcinogen. These classifications are based on their assessment of sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

7 - PERSONAL PROTECTION AND CONTROLS

RESPIRATORY PROTECTION

For respirable quartz levels that exceed or are likely to exceed an 8hr-TWA of 0.1 mg/m³, a NIOSH/MSHA approved dust respirator must be worn. For respirable quartz levels that exceed or are likely to exceed an 8hr-TWA of 0.5 mg/m³, a NIOSH/MSHA approved HEPA filter respirator must be worn. If respirable quartz levels exceed or are likely to exceed an 8hr-TWA of 5 mg/m³, a NIOSH/MSHA approved positive pressure, full face respirator or equivalent is required. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements.

VENTILATION

Local exhaust or general ventilation adequate to maintain exposures below appropriate exposure limits.

SKIN PROTECTION

See "Hygiene" section below.

EYE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated.

HYGIENE

Wash dust-exposed skin with soap and water before eating, drinking, smoking, and using toilet facilities. Wash work clothes after each use.

OTHER CONTROL MEASURES

Respirable dust and quartz levels should be monitored regularly. Dust and quartz levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee work stations.

8 - STORAGE AND HANDLING PRECAUTIONS

This product is not intended or designed for use as an abrasive blasting medium or for foundry applications, and should not be used for these purposes.

Follow the personal protection and controls set forth in Section 7 of this MSDS when handling this product. Respirable crystalline silica-containing dust may be generated during processing, handling, and storage.

Do not store near food and beverages or smoking materials.

9 - SPILL, LEAK AND DISPOSAL PRACTICES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

The personal protection and controls identified in Section 7 of the MSDS should be applied as appropriate.

Spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Wetting of spilled materials and/or use of respiratory protective equipment may be necessary.

This product is not subject to the reporting requirements of Title III of SARA, 1986, and 40 CFR 372.

WASTE DISPOSAL METHOD

Pickup and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

10 - TRANSPORTATION

DOT HAZARD CLASSIFICATION

None

PLACARD REQUIRED

None

LABEL REQUIRED

Label as required by the OSHA Hazard Communication Standard [29 CFR 1910.1200 (f)] and applicable state and local laws and regulations.

FOR FURTHER INFORMATION CONTACT:

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NOTICE: Norlite Corporation believes that the information contained on this Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of publication. They are not necessarily all-inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules or insurance requirements.

NO WARRANTY IS MADE, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.