108 Pebble Lane, Clayville ext. 14, Olifantsfontein, SA
Tel: +27 11 316 4390 (SA) or +27 87 351 4886 (VOIP)
Fax: +27 11 316 4395
www.metadynamics.co.za

LIMESTONE MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/COMPANY

1.1 Product identifiers
Product name: Limestone (calcium carbonate)
Brand: Metadynamics

1.2 Details of the supplier of the safety data sheet
Company: Metadynamics CC
108 Pebble Lane, Clayville ext. 14, Olifantsfontein, SA
Tel: +27 11 316 4390 (SA) or +27 87 351 4886 (VOIP)
Fax: +27 11 316 4395
www.metadynamics.co.za

2. HAZARDS IDENTIFICATION

2.1 Emergency overview
This product is irritating to the eyes, respiratory system and skin.

2.2 Potential health effects

EYES
Dust or powder may irritate eye tissue.

SKIN
Dust or powder may irritate the skin.

INGESTION
May cause temporary irritation of the throat, stomach and gastrointestinal tract.

INHALATION
WARNING: This product contains crystalline silica. Long-term overexposure to crystalline silica causes silicosis, a form of pulmonary fibrosis. Continued overexposure to silica can lead to cardiopulmonary impairment. Crystalline silica can been reviewed by IARC. IARC found sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite from occupational sources.

2.3 Medical conditions aggravated by exposure
No data available.

2.4 Potential environmental effects
No significant environmental effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Component related regulatory information
This product may be regulated, have exposure limits or other information identified as the following:
Silica, crystalline (general form).

108 Pebble Lane, Clayville ext. 14, Olifantsfontein, SA
Tel: +27 11 316 4390 (SA) or +27 87 351 4886 (VOIP)
Fax: +27 11 316 4395
www.metadynamics.co.za

3.2 Component information
This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

4. FIRST AID MEASURES

4.1 Description of first aid measures

IF INHALED
Move to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

IN CASE OF SKIN CONTACT
Wash with soap and water. Contact a physician if irritation persists or later develops.

IN CASE OF EYE CONTACT
Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelids) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or later develops.

IF SWALLOWED
If person is conscious, give large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media
None required.

5.2 Flashpoint (method used)
Not flammable.

5.3 Flammable limits in air
Not flammable.

5.4 Unusual fire and explosion hazards
Contact with powerful oxidising agents may cause fire and/or explosions.

6. ACCIDENTAL RELEASE MEASURES

6.1 Containment procedures
Contain the discharged material.

6.2 Clean-up procedures
Provide adequate ventilation. Cleanup personnel should use personal protective equipment to reduce eye contact, inhalation of dust and prolonged skin contact. Use vacuum equipment with HEPA filters or wet sweeping/dust suppressant if sweeping is required. Personal safety, handling and exposure recommendations described elsewhere in this data sheet apply to exposure during clean up of spilled material and must be followed.

6.3 Evacuation procedures
None necessary.

108 Pebble Lane, Clayville ext. 14, Olifantsfontein, SA
Tel: +27 11 316 4390 (SA) or +27 87 351 4886 (VOIP)
Fax: +27 11 316 4395
www.metadynamics.co.za

7. HANDLING AND STORAGE

7.1 Handling procedures
Avoid getting this material into contact with your skin and eyes.

7.2 Storage procedures
Store in a cool, dry, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Personal protective equipment

EYE/FACE 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.

SKIN PROTECTION
See “Hygiene” section below.

RESPIRATORY PROTECTION
For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.1mg/m^3, a NIOSH approved dust respirator is recommended. For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.5mg/m^3, a NIOSH approved HEPA filter respirator is recommended. If respirable quartz levels exceed or are likely to exceed an 8-hr TWA of 5mg/m^3, a NIOSH approved positive pressure, full face respirator or equivalent is recommended. 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.

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

8.2 Other control methods
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
a) Colour: light cream
b) pH: 9
c) Oil absorption: 13 – 15 %
d) Moisture: 1 – 2 %
e) SG: 2.6
f) Bulk density: 0.95 – 1.2

10. STABILITY AND REACTIVITY

10.1 Stability
Stable.

108 Pebble Lane, Clayville ext. 14, Olifantsfontein, SA
Tel: +27 11 316 4390 (SA) or +27 87 351 4886 (VOIP)
Fax: +27 11 316 4395
www.metadynamics.co.za

10.2 Conditions to avoid
Avoid contact with incompatible materials (see below).

10.3 Incompatible materials
Contact with powerful oxidising agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.

10.4 Hazardous decomposition products
Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidising agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride.

10.5 Hazardous polymerisation
Not known to polymerise.

11. TOXICOLOGICAL INFORMATION

11.1 Acute toxicity

EYE CONTACT
Direct contact with dust may cause irritation by mechanical abrasion.

SKIN CONTACT
Direct contact may cause irritation by mechanical abrasion.

SKIN ABSORPTION
Not expected to be a significant exposure route.

INGESTION
Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation and blockage.

INHALATION: Dusts may irritate the nose, throat, and respiratory tract by mechanical abrasion. Coughing, sneezing, and shortness of breath may occur following exposures in excess of appropriate exposure limits.

11.2 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.

108 Pebble Lane, Clayville ext. 14, Olifantsfontein, SA
Tel: +27 11 316 4390 (SA) or +27 87 351 4886 (VOIP)
Fax: +27 11 316 4395
www.metadynamics.co.za

There are reports in the 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. Some of these studies of silicotics do not account for lung cancer confounders, especially smoking. Limestone is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA). In October 1996, an IARC Working Group re-assessing crystalline silica, a component of this product, designated respirable crystalline silica as carcinogenic (Group 1). The NTP's Report on Carcinogens. 9th edition, lists respirable crystalline silica as a "known human carcinogen." In year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

WARNING: This product contains chemical(s) known to the state of California to cause cancer.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

GENERAL PRODUCT INFORMATION
Must be prohibited in organic production systems.

COMPONENT ANALYSIS: AQUATIC TOXICITY
No ecotoxicity data are available for this product's components.

ENVIRONMENTAL FATE
This material shows no bioaccumulation or food chain concentration toxicity potential.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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

14. TRANSPORT INFORMATION

14.1 DOT hazard classification

None.

14.2 Placard required

None.

14.3 Label required

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

108 Pebble Lane, Clayville ext. 14, Olifantsfontein, SA
Tel: +27 11 316 4390 (SA) or +27 87 351 4886 (VOIP)
Fax: +27 11 316 4395
www.metadynamics.co.za

15. REGULATORY INFORMATION

15.1 Applicable regulations
Refer to country of destination.

16. OTHER INFORMATION

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and for people working with or handling these products. This information is believed to be reliable and updated at 24/07/14 and represents the best information currently available and known by Metadynamics. However, Metadynamics makes no guarantee or warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. The information related herein is based on proper handling and anticipated uses and is for the material without chemical additions/alterations. Users should make their own investigations to determinate the suitability of the information for their particular purposes.