

Product Name : Eco De Vita KRM

Date Revised : Jun. - 30 - 2010

## Material Safety Data Sheet

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### Section 1 – GENERAL INFORMATION

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**PRODUCT NAME**

Eco De Vita KRM

**STATEMENT OF HAZARDOUS NATURE**

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

**NFPA**

FLAMMABILITY: 0

HEALTH HAZARD: 2

INSTABILITY: 0

**MANUFACTURER**

Company: Shikoku Chemicals Corporation

## Address:

8- 537- 1, Doki- Cho Higashi, Marugame,  
Kagawa, 763- 8504 JAPAN  
Telephone: +81( 88) 698 4111  
Fax: +81( 88) 698 4415**SUPPLIER**

Company: Shikoku International Corporation

## Address:

301 N. Rampart St  
#C Orange CA92868, USA  
Telephone: 714- 978- 0347  
Fax: 714- 978- 3820**PRODUCT USE**

Interior Wall Finish.

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### Section 2 - COMPOSITION / INFORMATION ON INGREDIENTS

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NAME	CAS RN	%
Calcium carbonate	471-34-1	30-50
diatomaceous earth,flux-calcined	68855-54-9	<20
silica crystalline-quartz		<20
Copolymer of vinyl acetate and ethylene		<10
pigment		<10
other additives		<20

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### **Section 3 - HAZARDS IDENTIFICATION**

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#### **EMERGENCY OVERVIEW**

##### **RISK**

Irritating to eyes.

May cause CANCER by inhalation.

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Inhalation may produce health damage\*.

Cumulative effects may result following exposure\*.

May produce discomfort of the eyes\*.

May produce skin discomfort\*.

Exposure may produce irreversible effects\*.

#### **POTENTIAL HEALTH EFFECTS**

##### **ACUTE HEALTH EFFECTS**

###### **SWALLOWED**

The material has NOT been classified as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g.liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality (death) rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, unintentional ingestion is not thought to be cause for concern.

###### **EYE**

There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. There may be damage to the cornea. Unless treatment is prompt and adequate there may be permanent loss of vision. Conjunctivitis can occur following repeated exposure. The dust may produce eye discomfort and abrasive eye inflammation.

###### **SKIN**

There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

###### **INHALED**

Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.

Acute silicosis occurs under conditions of extremely high silica dust exposure particularly when the particle size of the dust is small. The disease is rapidly progressive and spreads widely through the lungs within months of the initial exposure and causing deaths within 1 to 2 years.

Effects on lungs are significantly enhanced in the presence of respirable particles.

##### **CHRONIC HEALTH EFFECTS**

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime

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symptom is breathlessness; lung shadows show on X-ray.

Repeated exposures, in an occupational setting, to high levels of fine- divided dusts may produce a condition known as pneumoconiosis which is the lodgement of any inhaled dusts in the lung irrespective of the effect. This is particularly true when a significant number of particles less than 0.5 microns (1/50,000 inch), are present. Lung shadows are seen in the X-ray. Symptoms of pneumoconiosis may include a progressive dry cough, shortness of breath on exertion, increased chest expansion, weakness and weight loss. As the disease progresses the cough produces a stringy mucous, vital capacity decreases further and shortness of breath becomes more severe. Pneumoconiosis is the accumulation of dusts in the lungs and the tissue reaction in its presence. It is further classified as being of noncollagenous or collagenous types. Noncollagenous pneumoconiosis, the benign form, is identified by minimal stromal reaction, consists mainly of reticulin fibres, an intact alveolar architecture and is potentially reversible.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. This has been demonstrated via both short- and long-term experimentation.

On the basis of epidemiological data, it has been concluded that prolonged inhalation of the material, in an occupational setting, may produce cancer in humans.

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#### **Section 4 - FIRST AID MEASURES**

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##### **SWALLOWED**

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

##### **EYE**

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

##### **SKIN**

If skin or hair contact occurs:

- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

##### **INHALED**

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.

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- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

**NOTES TO PHYSICIAN**

Treat symptomatically.

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**Section 5 - FIRE FIGHTING MEASURES**

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Flash Point (°F) : Not Applicable  
Lower Explosive Limit (%) : Not Applicable  
Upper Explosive Limit (%) : Not Applicable  
Autoignition Temp (°F) : Not Available

**EXTINGUISHING MEDIA**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

**GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

- Non combustible.
- Not considered to be a significant fire risk, however containers may burn.

May emit poisonous fumes.

May emit corrosive fumes.

**PERSONAL PROTECTION**

Glasses:  
Chemical goggles.  
Gloves:  
Respirator:  
Particulate

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**Section 6 - ACCIDENTAL RELEASE MEASURES**

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**MINOR SPILLS**

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable labelled container for waste disposal.

**MAJOR SPILLS**

Moderate hazard.

- **CAUTION:** Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.
- Recover product wherever possible.
- **IF DRY:** Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. **IF WET:** Vacuum/shovel up and place in labelled containers for disposal.
- **ALWAYS:** Wash area down with large amounts of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

**EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)**

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour **WITHOUT** experiencing or developing

life-threatening health effects is:

silica crystalline - quartz	50	mg/m <sup>3</sup>
calcium carbonate	500	mg/m <sup>3</sup>
diatomaceous earth, flux-calcined	500	mg/m <sup>3</sup>

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

silica crystalline - quartz	0.25	mg/m <sup>3</sup>
calcium carbonate	50	mg/m <sup>3</sup>
diatomaceous earth, flux-calcined	50	mg/m <sup>3</sup>

other than mild, transient adverse effects

without perceiving a clearly defined odour is:

silica crystalline - quartz	0.15	mg/m <sup>3</sup>
calcium carbonate	30	mg/m <sup>3</sup>
diatomaceous earth, flux-calcined	30	mg/m <sup>3</sup>

The threshold concentration below which most people will experience no appreciable risk of health effects:

silica crystalline - quartz	0.15	mg/m <sup>3</sup>
calcium carbonate	15	mg/m <sup>3</sup>
diatomaceous earth, flux-calcined	10	mg/m <sup>3</sup>

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American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

### RECOMMENDED STORAGE METHODS

SUITABLE CONTAINER

STORAGE INCOMPATIBILITY

None known.

STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.

### STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE CONTROLS

US OSHA Permissible Exposure Levels (PELs)

Z	Material	TWA	TWA	STEL	STEL	Peak	Peak	Max	Max	Max
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	excursion	excursion	excursion

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	ppm	mg/m <sup>3</sup>	duration
Z1 Silica, crystalline quartz, respirable dust	(See Table Z- 3)		
Z1 Calcium carbonate - Total dust	15		
Z1 Calcium carbonate - Respirable fraction	5		
Z1 Limestone - Total dust	15		
Z Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm STEL mg/m <sup>3</sup> Peak ppm Peak mg/m <sup>3</sup> Max excursion ppm Max excursion mg/m <sup>3</sup> Max excursion duration
Z1 Marble - Total dust		15	
Z1 Marble - Respirable fraction		5	
Z1 Limestone - Respirable fraction		5	

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>
US - California Permissible Exposure Limits for Chemical Contaminants	silica crystalline - quartz (Silica, crystalline, Quartz - respirable dust)	--	0.1				
US - California Permissible Exposure Limits for Chemical Contaminants	silica crystalline - quartz (Silica, crystalline, Quartz - total dust)	--	0.3				
US - New York Occupational Exposure Limits	silica crystalline - quartz (Ø Silica, Crystalline - Quartz)		(0.05)				
US - Minnesota Permissible Exposure Limits (PELs)	silica crystalline - quartz (Coal dust (greater than or equal to 5% SiO <sub>2</sub> ) - Respirable quartz fraction)		0.1				
US - Minnesota Permissible Exposure Limits (PELs)	silica crystalline - quartz (Silica, crystalline quartz, respirable dust)		0.1				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	silica crystalline - quartz (Silica, crystalline quartz, respirable dust)		0.1				
US - Vermont Permissible Exposure Limits Table Z-1- A Transitional Limits for Air Contaminants	silica crystalline - quartz (Silica, crystalline quartz (as quartz), respirable dust)		See Table Z- 3				
US - Vermont Permissible Exposure Limits Table Z-1- A Final Rule Limits for Air Contaminants	silica crystalline - quartz (Silica, crystalline quartz (as quartz), respirable dust)		0.1				

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US - Idaho - Limits for Air Contaminants	silica crystalline - quartz (Silica, crystalline quartz - respirable dust)		[3]				
US - Idaho - Toxic and Hazardous Substances - Mineral Dust	silica crystalline - quartz (Silica: Crystalline: Quartz (respirable))	[f] 250		[m] 10 mg/M3			
US - Idaho - Toxic and Hazardous Substances - Mineral Dust	silica crystalline - quartz (Silica: Crystalline: Quartz (total dust))			30 mg/M3			
Canada - Quebec Occupational Exposure Limits (French)	silica crystalline - quartz (Silice cristalline, quartz)			0, 1			
US OSHA Permissible Exposure Levels (PELs) - Table Z1	silica crystalline - quartz (Silica, crystalline quartz, respirable dust)			(See Table Z- 3)			
Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>
US - Washington Permissible exposure limits of air contaminants	silica crystalline - quartz (Silica, crystalline quartz - Respirable fraction)		0.1		0.3		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	silica crystalline - quartz (Silica - Crystalline (respirable size)+ : Quartz)		0.1				
US NIOSH Recommended Exposure Limits (RELs)	silica crystalline - quartz (Silica, Crystalline - - Quartz)		0.05				
Canada - Alberta Occupational Exposure Limits	silica crystalline - quartz (Quartz, Respirable particulate (Silica- Crystalline, Respirable))		0.1				
Canada - Alberta Occupational Exposure Limits	silica crystalline - quartz (Silica- Crystalline, Respirable particulate - Quartz)		0.1				
US ACGIH Threshold Limit Values (TLV)	silica crystalline - quartz (Silica, Crystalline - Quartz)		(0.05)				
US - Idaho - Limits for Air Contaminants	calcium carbonate (Limestone - Respirable fraction)		5				
US - Idaho - Limits for Air Contaminants	calcium carbonate (Limestone - Total dust)		15				
US - Idaho - Limits for Air Contaminants	calcium carbonate (Calcium Carbonate - Respirable fraction)		5				
US - Idaho - Limits for Air Contaminants	calcium carbonate (Marble - Total dust)		15				

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US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	calcium carbonate (Calcium carbonate - Respirable fraction)	5
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	calcium carbonate (Calcium carbonate - Total dust)	15
US - Idaho - Limits for Air Contaminants	calcium carbonate (Marble - Respirable fraction)	5
US - Idaho - Limits for Air Contaminants	calcium carbonate (Calcium Carbonate - Total dust)	15
US - Minnesota Permissible Exposure Limits (PELs)	calcium carbonate (Limestone - Total dust)	15
US - Minnesota Permissible Exposure Limits (PELs)	calcium carbonate (Calcium carbonate - Respirable fraction)	5
US - Minnesota Permissible Exposure Limits (PELs)	calcium carbonate (Calcium carbonate - Total dust)	15
US - Minnesota Permissible Exposure Limits (PELs)	calcium carbonate (Limestone - Respirable fraction)	5

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>
US - Minnesota Permissible Exposure Limits (PELs)	calcium carbonate (Marble - Respirable fraction)		5				
US - Minnesota Permissible Exposure Limits (PELs)	calcium carbonate (Marble - Total dust)		15				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	calcium carbonate (Limestone - Total dust)		15				
US - Vermont Permissible Exposure Limits Table Z- 1- A Final Rule Limits for Air Contaminants	calcium carbonate (Calcium Carbonate - Respirable fraction)		5				
US - Vermont Permissible Exposure Limits Table Z- 1- A Final Rule Limits for Air Contaminants	calcium carbonate (Calcium Carbonate - Total dust)		15				
US - Vermont Permissible Exposure Limits Table Z- 1- A Transitional Limits for Air Contaminants	calcium carbonate (Marble - Respirable fraction)		5				
US - Vermont Permissible Exposure Limits Table Z- 1- A Final Rule Limits for Air Contaminants	calcium carbonate (Limestone - Total dust)		15				
US - Vermont Permissible Exposure Limits Table Z- 1- A Final Rule Limits for Air Contaminants	calcium carbonate (Marble - Respirable fraction)		5				

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1- A Final Rule Limits for Air Contaminants	fraction)						
US - Vermont Permissible Exposure Limits Table Z-	calcium carbonate (Marble - Total dust)		15				
1- A Final Rule Limits for Air Contaminants							
US - Vermont Permissible Exposure Limits Table Z-	calcium carbonate (Limestone - Respirable fraction)		5				
1- A Final Rule Limits for Air Contaminants							
US - Vermont Permissible Exposure Limits Table Z-	calcium carbonate (Marble - Total dust)		15				
1- A Transitional Limits for Air Contaminants							
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	calcium carbonate (Marble - Respirable fraction)		5				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	calcium carbonate (Marble - Total dust)		15				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	calcium carbonate (Limestone - Respirable fraction)		5				
US - Vermont Permissible Exposure Limits Table Z-	calcium carbonate (Calcium Carbonate - Total dust)		15				
1- A Transitional Limits for Air Contaminants							
US - Vermont Permissible Exposure Limits Table Z-	calcium carbonate (Limestone - Respirable fraction)		5				
1- A Transitional Limits for Air Contaminants							

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>
US - Vermont Permissible Exposure Limits Table Z-	calcium carbonate (Limestone - Total dust)		15				
1- A Transitional Limits for Air Contaminants							
US - Vermont Permissible Exposure Limits Table Z-	calcium carbonate (Calcium Carbonate - Respirable fraction)		5				
1- A Transitional Limits for Air Contaminants							
Canada - Quebec Occupational Exposure Limits (French)	calcium carbonate (Calcium, carbonate de)		10				
US - Washington Permissible exposure limits of air contaminants	calcium carbonate (Marble - Respirable fraction)		5		10		
US - Washington Permissible exposure limits of air contaminants	calcium carbonate (Marble - Total particulate)		10		20		

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Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	calcium carbonate (Calcium carbonate)	10	20
US OSHA Permissible Exposure Levels (PELs) - Table Z1	calcium carbonate (Calcium carbonate - Total dust)	15	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	calcium carbonate (Limestone)	10	20
US - Washington Permissible exposure limits of air contaminants	calcium carbonate (Calcium carbonate - Total particulate)	10	20
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	calcium carbonate (Limestone)	(See Table 11)	
US - Washington Permissible exposure limits of air contaminants	calcium carbonate (Calcium carbonate - Respirable fraction)	5	10
US - Washington Permissible exposure limits of air contaminants	calcium carbonate (Limestone - Respirable fraction)	5	10
US - Washington Permissible exposure limits of air contaminants	calcium carbonate (Limestone - Total particulate)	10	20
Canada - Alberta Occupational Exposure Limits	calcium carbonate (Limestone (Calcium carbonate))	10	
Canada - Alberta Occupational Exposure Limits	calcium carbonate (Calcium carbonate (Aragonite, Calcite, Marble, Vaterite))	10	
Canada - Alberta Occupational Exposure Limits	calcium carbonate (Marble (Calcium carbonate))	10	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	calcium carbonate (Limestone - Total dust)	15	

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>
US OSHA Permissible Exposure Levels (PELs) - Table Z1	calcium carbonate (Calcium carbonate - Respirable fraction)		5				
US OSHA Permissible Exposure Levels (PELs) - Table Z1	calcium carbonate (Limestone - Respirable fraction)		5				
US OSHA Permissible	calcium carbonate		5				

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Exposure Levels (PELs) - Table Z1	(Marble - Respirable fraction)	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	calcium carbonate (Marble - Total dust)	15
US NIOSH Recommended Exposure Limits (RELs)	calcium carbonate (Calcium carbonate)	5
US ACGIH Threshold Limit Values (TLV)	calcium carbonate (Ī Calcium carbonate)	(10)
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	calcium carbonate (Calcium carbonate/marble)	(See Table 11)
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	calcium carbonate (Marble/calcium carbonate)	(See Table 11)
US NIOSH Recommended Exposure Limits (RELs)	calcium carbonate (Calcium carbonate)	10
US - New York Occupational Exposure Limits	calcium carbonate (Ø Calcium carbonate)	(10)
US - California Permissible Exposure Limits for Chemical Contaminants	calcium carbonate (Calcium carbonate; see Particulates not otherwise regulated)	- -
Canada - Alberta Occupational Exposure Limits	calcium carbonate (Calcium carbonate (Aragonite, Calcite, Marble, Vaterite))	10
US - Vermont Permissible Exposure Limits Table Z- 1- A Final Rule Limits for Air Contaminants	diatomaceous earth, flux- calcined (Silica, amorphous, diatomaceous earth, )	6
US - Vermont Permissible Exposure Limits Table Z- 1- A Transitional Limits for Air Contaminants	diatomaceous earth, flux- calcined (Silica, amorphous, diatomaceous earth, containing less than 1% crystalline silica)	See Table Z- 3

The following materials had no OELs on our record under the following CAS numbers

- calcium carbonate: No data available for CAS:13397-26-7 CAS:15634-14-7

#### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
silica crystalline - quartz	50	

Not available. Refer to individual constituents.

#### INGREDIENT DATA

SILICA CRYSTALLINE - QUARTZ:

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Because the margin of safety of the quartz TLV is not known with certainty and given the associated link between silicosis and lung cancer it is recommended that quartz concentrations be maintained as far below the TLV as prudent practices will allow.

**CALCIUM CARBONATE:**

The TLV-TWA is thought to be protective against the significant risk of physical irritation associated with exposure.

**DIATOMACEOUS EARTH, FLUX-CALCINED:**

None assigned. Refer to individual constituents.

**PERSONAL PROTECTION****EYE**

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them. DO NOT wear contact lenses.

**HANDS/FEET**

Suitability and durability of glove type is dependent on usage. Factors such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity,

are important in the selection of gloves.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

**OTHER**

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

**RESPIRATOR**

Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
10 x PEL	P1	-	PAPR-P1

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	Air-line*	-	-
50 x PEL	Air-line**	P2	PAPR-P2
100 x PEL	-	P3	-
		Air-line*	-
100+ x PEL	-	Air-line**	PAPR-P3

\* - Negative pressure demand \*\* - Continuous flow

**Explanation of Respirator Codes:**

Class 1 low to medium absorption capacity filters.

Class 2 medium absorption capacity filters.

Class 3 high absorption capacity filters.

PAPR Powered Air Purifying Respirator (positive pressure) cartridge.

Type A for use against certain organic gases and vapors.

Type AX for use against low boiling point organic compounds (less than 65°C).

Type B for use against certain inorganic gases and other acid gases and vapors.

Type E for use against sulfur dioxide and other acid gases and vapors.

Type K for use against ammonia and organic ammonia derivatives

Class P1 intended for use against mechanically generated particulates of sizes most commonly encountered in industry, e.g. asbestos, silica.

Class P2 intended for use against both mechanically and thermally generated particulates, e.g. metal fume.

Class P3 intended for use against all particulates containing highly toxic materials, e.g. beryllium.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

Use appropriate NIOSH-certified respirator based on informed professional judgement. In conditions where no reasonable estimate of exposure can be made, assume the exposure is in a concentration IDLH and use NIOSH-certified full face pressure demand SCBA with a minimum service life of 30 minutes, or a combination full facepiece pressure demand SAR with auxiliary self-contained air supply. Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

**ENGINEERING CONTROLS**

Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator. Correct fit is essential to obtain adequate protection an approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapors, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low	0.5-1 m/s (100-200 f/min.)

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velocity into zone of active generation)

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)

1-2.5 m/s (200-500 f/min.)

grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favorable to capture
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### PHYSICAL PROPERTIES

Molecular Weight: Not Applicable  
Melting Range (°F): Not Available  
Solubility in water (g/L): Immiscible  
pH (1% solution): Not Applicable  
Volatile Component (%vol): Not Available  
Relative Vapor Density (air=1): Not Available  
Lower Explosive Limit (%): Not Applicable  
Autoignition Temp (°F): Not Available

Boiling Range (°F): Not Applicable  
Specific Gravity (water=1): 1.25-1.45  
pH (as supplied): Not Applicable  
Vapour Pressure (mmHg): Not Available  
Evaporation Rate: Not Applicable  
Flash Point (°F): Not Applicable  
Upper Explosive Limit (%): Not Applicable  
Decomposition Temp (°F): Not Available

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State: Divided Solid

Viscosity: Not Available

**APPEARANCE**

Color	Physical State	Odour	Miscibility with water
Colored	Powder	Odorless	Immiscible

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**Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION**

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**CONDITIONS CONTRIBUTING TO INSTABILITY**

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

**STORAGE INCOMPATIBILITY**

None known.

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**Section 11 - TOXICOLOGICAL INFORMATION**

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**KRM**

The material may produce severe irritation to the eye causing pronounced inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

**CALCIUM CARBONATE:****TOXICITY**

Oral (rat) LD50: 6450 mg/kg

Eye (rabbit): 0.75 mg/24h - SEVERE

No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.

**IRRITATION**

Skin (rabbit): 500 mg/24h- Moderate

**DIATOMACEOUS EARTH, FLUX-CALCINED:**

Not available. Refer to individual constituents.

**SILICA CRYSTALLINE - QUARTZ:****TOXICITY**Inhalation (human) LCLo: 0.3 mg/m<sup>3</sup>/10Y

Inhalation (human) TCLo: 16 mppcf\*/8H/17.9Y

Inhalation (rat) TCLo: 50 mg/m<sup>3</sup>/6H/71WIntermittent; focal fibrosis,  
(pneumoconiosis), cough, dyspnoea

Intermittent; liver - tumours.

\* Millions of particles per cubic foot (based on impinger samples counted by light field techniques).

**IRRITATION**

Nil Reported

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WARNING: For inhalation exposure ONLY: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.

NOTE : the physical nature of quartz in the product determines whether it is likely to present a chronic health problem. To be a hazard the material must enter the breathing zone as respirable particles.

MATERIAL	CARCINOGEN	SENSITIZER	SKIN	MUTAGEN	REPROTOXIN
silica crystalline - quartz	ACGIH:A2				

**CARCINOGEN**

ACGIH: silica crystalline - quartz: A2

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**Section 12 - ECOLOGICAL INFORMATION**

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DO NOT discharge into sewer or waterways.

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**Section 13 - DISPOSAL CONSIDERATIONS**

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**Disposal Instructions**

All waste must be handled in accordance with local, state and federal regulations.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.
- Bury residue in an authorized landfill.
- Recycle containers where possible, or dispose of in an authorized landfill.

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**Section 14 - TRANSPORTATION INFORMATION**

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NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

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**Section 15 - REGULATORY INFORMATION**

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**RISK**

Risk Codes	Risk Phrases
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R49	May cause CANCER by inhalation.
R36	Irritating to eyes.
R48/20	Harmful: danger of serious damage to health by prolonged

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exposure through inhalation.

**REGULATIONS**

silica crystalline - quartz (CAS: 14808-60-7) is found on the following regulatory lists;

Canada Domestic Substances List (DSL)

Canada Ingredient Disclosure List (SOR/88-64)

International Agency for Research on Cancer (IARC) Carcinogens

OECD Representative List of High Production Volume (HPV) Chemicals

US - California Proposition 65 - Priority List for the Development of NSRLs for

Carcinogens

US - Minnesota Hazardous Substance List

US ACGIH Carcinogens Listing

US NIOSH Carcinogen List

calcium carbonate (CAS: 471-34-1) is found on the following regulatory lists;

Canada Domestic Substances List (DSL)

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

US Toxic Substances Control Act (TSCA) - Inventory

limestone (CAS: 1317-65-3) is found on the following regulatory lists;

Canada Non-Domestic Substances List (NDSL)

OECD Representative List of High Production Volume (HPV) Chemicals

US - Minnesota Hazardous Substance List

US Toxic Substances Control Act (TSCA) - Inventory

diatomaceous earth, flux-calcined (CAS: 68855-54-9) is found on the following regulatory lists;

Canada Domestic Substances List (DSL)

Canada Ingredient Disclosure List (SOR/88-64)

OECD Representative List of High Production Volume (HPV) Chemicals

US Toxic Substances Control Act (TSCA) - Inventory

No data available for calcium carbonate as CAS: 13397-26-7, CAS: 15634-14-7

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**Section 16 - OTHER INFORMATION**

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**LIMITED EVIDENCE**

Inhalation may produce health damage\*.

Cumulative effects may result following exposure\*.

May produce discomfort of the eyes\*.

\* (limited evidence).

The present MSDS has been sincerely described at the best of our knowledge, but the described values are not guaranteed. Further, the precautions described in the MSDS are based on a general case. Please be sure to take the safety measures depending on specific uses and applications.