MSDS FOR HYDRATED LIME

Product Name: HYDRATED LIME
Product / Part No :ENVKEM – 607 **REF : EIS/RMC/MSDS/007-0**

1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY	
Chemical name:	Calcium hydroxide
Product name:	Hydrated Lime,
Formula:	Ca(OH)2
CAS NO #:	1305-62-0
Molecular Weight:	74.08
Material Uses:	Water treatment, steel flux, caustic agent, pH adjustment, acid gas absorption,
Suppliers Details :	ENVKEM INDUSTRIAL SOLUTIONS
	No.9, Rajaji Street, Ramakrishna Nagar,
	Valasaravakkam, Chennai – 600 087.
	Telephone: 044 24863868, Telefax: 044 24865956.
	E.Mail:sk@envkem.com.www.envkem.in.

2. COMPOSITION/INFORMATION ON INGREDIENTS		
Ingredient	**% by Weight**	**CAS.NO**
Calcium Hydroxide	85 - 90%	1305 – 62 – 0
Crystalline Silica	3%	14808 – 60 – 7
Water	5 – 7 %	7732 – 18 – 5
Magnesium Hydroxide	2 – 5 %	1309 – 42 - 8

3. HAZARDS IDENTIFICATION AND CLASSIFICATION

Overview:	Hydrate lime is an odorless white or grayish-white granular powder. Contact can cause irritation to eyes, skin, respiratory system, and gastrointestinal tract. Contact may aggravate disorders of eyes, skin, gastrointestinal tract, and respiratory system.
Eyes:	Can cause severe irritation or burning of eyes including permanent damage.
Skin:	Can cause severe irritation or burning of skin, especially in the presence of moisture.
Ingestion:	Can cause severe irritation or burning of gastrointestinal tract if swallowed.
Inhalation:	Can cause severe irritation of the respiratory system. Long-term exposure may permanent damage. Hydrated lime is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain crystalline quartz silica, which has been classified by IARC as (Group I) carcinogenic to humans when inhaled. Inhalation of silica can also cause a chronic lung disorder, silicosis.
Irritant:	Eyes, mucous membranes, moist skin, respiratory tract.
Flammability:	This product is not flammable or combustible
Explosive:	This product is not explosive in dust form
Reactivity:	May react violently with strong acids producing heat and possible steam explosion in confined space
Symbols:	WHMIS Symbol: “E” Corrosive Material; “D2A” Materials causing other toxic effects

4. HEALTH EFFECTS AND TREATMENTS

Health Effects:	
Inhalation:	Acute: irritation, sore throat ,cough, sneezing. Chronic: persistent coughing and breathing problems. Long-term exposure to silica can cause a chronic lung disorder, silicosis.
Eyes	Acute: severe irritation Chronic: possible blindness when exposure is prolonged
Skin:	Acute: removes natural skin oils, blotches, itching and superficial burns in case of sweating.
	Chronic: no known effects.
Ingestion:	Acute: sore throat, stomach aches, cramps, diarrhea, vomiting.
	Chronic: no known effects.
Treatments:	
Inhalation:	Move victim to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration.
Eyes:	Immediately flush eyes with large amounts of water for at least 15 minutes. Pull back the eyelid to make sure all the limestone dust has been washed out. Seek medical attention immediately. Do not rub eyes.
Skin:	Flush exposed area with large amounts of water. Seek medical attention immediately.

Ingestion: attention consciousness or is	Give large quantities of water or fruit juice. Do not induce vomiting. Seek medical immediately. Never give anything by mouth if victim is rapidly losing unconsciousness or convulsing.

5. FIRE FIGHTING MEASURES

Flash Point:	Non-flammable
Auto ignition temperature:	Non-flammable
Inflammability limits:	None
Explosion risk: generate	None by itself, but heat produced by reaction with strong acids can steam and pressure
Hazardous combustion products: water to	Decomposes to produce calcium oxide (CaO), which can react with produce steam and pressure
Extinguishing media: halogenated may be used to deluge small appropriate extinguishing media for conditions.	Use dry chemical fire extinguisher. Do not use water or compounds, except that large amounts of water quantities of hydrated lime. Use surrounding fire
Fire fighting instructions: fighting turn- (self-contained	Keep personnel away from and upwind of fire. Wear full fire- out gear (full Bunker gear), and respiratory protection breathing apparatus).

6. ACCIDENT PREVENTION MEASURES

Individual and collective precautions: ventilation to	Avoid creating conditions which release dust-use mechanical remove dust from work spaces
Avoid inhalation of dust:	Wear respiratory protection-minimum NIOSH N-95 Dust Mask
Cleaning method for spills: Section 8). materials. Avoid of clean-up area store spilled containers. Dust residue on surfaces	Use personal protective equipment (eyes, skin and inhalation, see Use dry methods (vacuuming, sweeping) to collect spilled generating dust. For large spills, evacuate area downwind operations to minimize dust exposure. For small spills, materials in dry, sealed plastic or metal may be washed with water.
Precautions for the protection of pH)	May not be released into surface waters without controls (increases
The environment:	
Waste Disposal: environmental	Dispose according to federal, provincial/state and local regulations

7. HANDLING AND STORAGE

Handling: avoid creating	In open air or in ventilated places, avoid skin and eye contact, airborne dust
Storage: and	Store in dry places sheltered from humidity. Keep away from acids incompatible substances. Keep out of reach of children

8. EXPOSURE CONTROL/PERSONAL PROTECTION	
Exposure Limits:	Calcium hydroxide: 15mg/m3 (OSHA-total), 5mg/m3 (OHSA-resp);
	5 mg/m3 (ACGIH, O. Reg.833)
(OSHA);	Silica (crystalline quartz): 10 mg/m3 (total dust); 3.3 mg/m3 (respirable)
	0.05 mg/m3 (respirable-ACGIH); 0.1 mg/m3 (O.Reg.845)
Engineering Controls: limits.	Use ventilation and dust collection to control exposure to below applicable
Respiratory Protection:	Wear NIOSH N-95 Dust Mask.
Eye Protection: be worn worn when	Eye protection (chemical goggles, safety goggles and/or face shield) should where there is a risk of limestone exposure. Contact lenses should not be working with limestone products
Hand Protection:	Use clean dry gloves
Skin Protection: over the	Cover body with suitable clothes (long sleeves shirts and trousers). Use ankle waterproof caustic resistant footwear

9. PHYSICAL AND CHEMICAL PROPERTIES	
Physical State:	Solid
Odor & Appearance:	Odorless, white powder
pH:	12.4 in saturated water solution at 25 degree Celsius
Melting point:	580 degrees Celsius
Boiling point:	2850 degrees Celsius
Vapor pressure:	Non volatile
Vapor density:	Non volatile
Density:	2.24 g/cc
Solubility:	Slightly soluble in water: 0.2%@ 0 degrees Celsius
	Soluble in acids, glycerin and sugar solutions

10. STABILITY AND REACTIVITY	
Stability:	Stable products, not very soluble.
Decomposition temperature:	580 degrees Celsius, forms calcium oxide (CaO) and water
Reactivity:	Reacts with acids to form calcium salts while generating heat.
	Reacts with carbon dioxide in air to form calcium carbonate.

Conditions to avoid:	Vicinity of incompatible materials
Incompatible materials:	Acids; reactive fluoridated, brominated or phosphorous compounds; aluminum (may for hydrogen gas), reactive powdered metals; organic acid anhydrides; nitro-organic compounds; interhalogenated compounds
Hazardous decomposition products:	Calcium oxide (CaO)

11. TOXICOLOGICAL INFORMATION

Toxicity:	LD 50 oral (rat) for calcium hydroxide is 7340 mg/kg.This product is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain crystalline silica, which has been classified by IARC as (Group I) carcinogenic to humans when inhaled in the form of quartz or cristobalite. No reported Carcinogenicity, Reproductive Effects, Teratogenicity or Mutagenicity.
Exposure Limits:	Refer to Section 8.
Irritancy:	Can cause severe irritation of eyes, skin respiratory tract and gastrointestinal tract.
Chronic Exposure:	Inhalation of silica can cause a chronic lung disorder, silicosis.

12. ECOLOGICAL INFORMATION

Alkaline substance that increases pH to a maximum of 12.4 in a saturated water solution at 25 degrees Celsius

Calcium hydroxide gradually reacts with CO_2 in air to form calcium carbonate ($CaCO_3$)

Calcium carbonate is ecologically neutral

Uncontrolled spillage in surface waters should be avoided since the increase pH could be detrimental to fish

Harmful to aquatic life in high concentration

13. DISPOSAL CONSIDERATIONS

Dispose according to federal, provincial/state and local environmental regulations.

14. TRANSPORTATION INFORMATION

Classification:	TDG	Not listed for ground transportation
	HMR	Not listed for ground transportation

TDG: Transportation of Dangerous Goods Regulation

15. REGULATORY INFORMATION	
Symbol:	**WHMIS RATING**
	D2A, E
	NFPA RATING
	HEALTH-2 SPECIFIC HAZARD-ALK FLASH POINTS-0 REACTIVITY-0
	HMIS RATING
	HEALTH-2 SPECIFIC HAZARD-ALK FLASH POINTS-0 REACTIVITY-0
Risk Phrases:	Risk of serious damage to the eyes
	Keep out of reach of children
Safety Phrases:	Keep storage container away from humidity
	Avoid contact with skin and eyes. In case of contact with eyes, rinse
	Immediately with water for at least for 15 minutes
CPR (Canada): Controlled information required by the	This product has been classified in accordance with the hazard criteria of the Products Regulation (CPR) of Canada and this MSDS contains all CPR.
16. MISCELLANEOUS OTHER INFORMATION	
Hydrate Lime can be removed from objects (such as vehicles) using rags dampened with dilute vinegar. After applying dilute vinegar, vehicles (especially chrome surfaces) must be washed with water.	
Revision Information.	
HYDRATED LIME MSDS issued 01.12.2010, Revision (2) – MARCH-2015	

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