MATERIAL SAFETY DATA SHEET
CLR CALCIUM, LIME & RUST REMOVER

1 - PRODUCT AND COMPANY IDENTIFICATION

SDS ID: 521012

Product Name **CLR Calcium, Lime & Rust Remover**

Product Use Aqueous Acidic Cleaner for Removal of Calcium, Lime, and Rust from Hard Surfaces Retail Package: [28 fl. oz., 42 fl. oz., and 128 fl. oz. (one gallon)}

CAS# Proprietary Mixture

Restrictions on Use Incompatible with strong oxidizing agents, metals (except stainless steel, chrome), acids, bases, and bleach.

Manufacturer: **Jelmar, LLC**
Address: 5550 W. Touhy Ave.
Skokie, IL 60077

Emergency Phone Number: 1(800) 323-5497 (USA)
Monday – Friday 8:30 A.M. – 4:30 P.M. CST
Emergency 24 hour Contact: Chemtrec 1(800) 424-9300

2 – HAZARDS IDENTIFICATION

Emergency Overview: **WARNING:** EYE IRRITATANT. GHS Toxicity Category 2A Causes eye irritation and possible SKIN IRRITATANT GHS Category 3 – on sensitive skin.DO NOT get in eyes, on skin or clothing. DO NOT mix with bleach or other household chemicals as harmful fumes may result. DO NOT ingest. DO NOT breathe vapor or mist. Use in well ventilated areas. Keep container closed when not in use.

KEEP OUT OF REACH OF CHILDREN

Potential Short Term Health Effects

Routes of Exposure Eyes, Skin, Inhalation, Ingestion.

Eyes Irritant
Avoid eye contact
Effects may vary depending on length of exposure, solution concentration

Skin Irritant. Prolonged contact may cause dermatitis, and itching.

Inhalation No adverse effects expected under typical use conditions.

Ingestion Oral burns, vomiting, and gastrointestinal disturbance.

Target organs Eyes. Skin.

SECTION 3 - COMPOSITION /INFORMATION ON INGREDIENTS

Component	CAS#	OSHA HAZARD	% by Weight
1. Lactic Acid	79-33-4	YES	12.00-18.00
2. Gluconic Acid	526-95-4	YES	2.50-3.75
3. Lauramine Oxide	1643-20-5	YES	1.50-3.25

SECTION 4 – FIRST AID MEASURES

EYE CONTACT: In case of eye contact, immediately rinse eye thoroughly with plenty of water. Remove contact lenses, and continue rinsing for at least 15 minutes. If irritation persists, get medical attention.
SKIN CONTACT: Can be irritating to skin, prolonged contact can be more severe, no adverse effects during normal usage. In case of skin contact, rinse area for at least 15 minutes. Remove contaminated clothing and shoes, wash thoroughly before reuse. If irritation persists get medical attention.
INHALATION: Not a significant route of exposure. Remove to fresh air. If breathing is difficult, GET MEDICAL ATTENTION IMMEDIATELY.
INGESTION: DO NOT induce vomiting. If fully conscious, drink 16 ounces of water. CALL A PHYSCIAN OR POISON CONTROL CENTER IMMEDIATELY. NEVER give an unconscious person anything to ingest.

SECTION 5 – FIRE FIGHTING MEASURES

FLAMMABILTY: Not flammable
FLASH POINT: None; Method: ASTM D-56
EXPLOSIVE LIMITS IN AIR: Not available
EXTINGUISHING MEDIA: Not flammable. Use appropriate media for area. Use water spray, dry chemical, alcohol foam or carbon dioxide.
FIRE FIGHTING METHODS: Evacuate area of personnel. Wear protective NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers. Run-off of large quantities of product from fire control may cause pollution. Contact appropriate agencies.
HAZARDOUS COMBUSTION PRODUCTS: Carbon Monoxide. Thermal decomposition can lead to irritating gases and vapors.
FIRE AND EXPLOSION HAZARDS: None known.

SECTION 6 – ACCIDENTAL RELEASES MEASURES

Steps to be taken in Case Material is Released or Spilled: Avoid contact with skin and eyes
Small Spill: No special clean-up procedure is necessary for small (less than 1 gallon) spills. Flush spill area with water. Wear rubber gloves.
Large Spill: Use personal protection recommended in Section 8. Isolate area, and deny entry to unnecessary and unprotected personnel. Dam spill, and absorb with earth, sand or similar material. Place in non-leaking containers. Dispose of collected material according to local, state, and federal regulations. Flush residue with large amount of water. Avoid direct discharge to sewers and surface waters.

SECTION 7- HANDLING AND STORAGE

STORAGE: Store in cool, well-ventilated area, away from heat. Keep containers tightly closed. Avoid contact with combustible materials, wood, and organic materials. Store in original container in a secure area away from children and pets.
HANDLING: Avoid contact with eyes, skin or clothing. May be harmful or if swallowed. Use with adequate ventilation. Avoid breathing vapors or mist. Do not eat, drink, or smoke in work area. Wash hand thoroughly after use. Consumer size containers (28, and 42 fluid ounces and gallon containers), should be rinsed and recycled. DO NOT PRESSURIZE, CUT OR EXPOSE THESE CONTAINERS TO HEAT, FLAME,

SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY.

DO NOT MIX WITH BLEACH, OR ANY OTHER PRODUCTS AS TOXIC FUMES MAY RESULT. KEEP OUT OF REACH OF CHILDREN.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION REQUIREMENT: Avoid prolonged breathing mists or dusts of this product. Use with adequate ventilation. Do not use in closed or confined spaces.

RESPIRATORY PROTECTION: None required during normal household use.

EYE PROTECTION: Not required during normal household usage. Do not wear contact lenses. Emergency responders should wear full eye and face protection.

SKIN PROTECTION: Rubber gloves with protective cuff. Emergency responders should wear impermeable gloves.

OTHER PROTECTION: Emergency responders should wear chemical type (impermeable) protective clothing and footwear where direct contact with chemicals in this product is possible.

WORK/HYGIENIC PRACTICES: Wash thoroughly with soap and water after use or handling.

EXPOSURE GUIDELINES:	OSHA		ACGIH	
COMPONENT	**PEL**	**STEL/C**	**TWA**	**STEL/C**
1. Lactic Acid	N.E	N.E.	N.E.	N.E.
2. Gluconic Acid	N.E.	N.E.	N.E.	N.E.
3. Lauramine Oxide	N.E.	N.E.	N.E.	N.E.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point:	99°C / 210° F	**Specific Gravity @20°C:**	1.04 – 1.06
Vapor Pressure:	N.D.	**Percent Volatiles:**	~77.2% (Calculated)
Freezing Point:	N.D.	**Evaporation Rate:**	N.D. (nBuAc=1)
Melting Point:	N.D.	**Total VOC (wt. %):**	0% - does not include any
Vapor Density (mm Hg):	N.D.	**(Volatile Organic Compounds/ California Air Resource Board)**	CARB applicable exemptions
pH: @20°C	2.10-2.30		
Solubility in Water: 100%			

SECTION 10 – STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: Avoid elevated temperatures.

INCOMPATIBLE MATERIALS: Strong oxidizing agents, metals (except stainless steel and chrome), acids, and bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition can lead to release of irritating gases, vapors and carbon oxides.

POSSIBILITY OF HAZARDOUS REACTIONS: No data.

SECTION 11 – TOXICOLOGICAL INFORMATION

LD_{50} ACUTE EYE IRRITATION: OPPTS 8740.2400 Toxicity - Irritant; GHS Toxicity Category 2A - Irritant

LD_{50} ACUTE DERMAL IRRATION - RABBITS: OPPTS 870.2500 Toxicity Category IV – Mild or Slight Skin Irritation; GHS Category 3 – Mild Skin Irritation.

LD_{50}ACUTE ORAL TOXICITY – RATS: OPPTS 870.1100 Toxicity Category IV >5,000 mg/kg; GHS Category 5 >5,000 mg/kg - Not Toxic

LD_{50}ACUTE DERMAL TOXICITY - RABBITTS: OPPTS 870-1200 Toxicity Category IV >5 g/kg; GHS Category 5 >5,000 mg/kg – Not Toxic
LD_{50} ACUTE INHALATION TOXICITY – RATS: OPPTS 870.1300 Toxicity Category IV - Not toxic by inhalation; GHS Category 5 - Not toxic by inhalation

SECTION 12- ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

LACTIC ACID:

Persistence / degradability

Readily biodegradable, according to appropriate OECD test.
Biochemical oxygen demand (BOD)5 = 0.45 mg O2 /mg
Biochemical oxygen demand (BOD)20= 0.60 mg O2/mg
Chemical oxygen demand (COD) =0.90 mg O2 /mg

Bioaccumulation

None.

Ecotoxicity

EC50/48h/Daphnia = 240mg/l LC50/48h/Fish = 320 mg/l
EC50/Algae = 3500 mg/l(neutral) No data available.

GLUCONIC ACID:

Fish 96-h LC50 > 1000.0 mg/L
Daphnid 48-h LC50 > 1000.0 mg/L
Green algal 96-h EC50 > 1000.0 mg/L
Fish Chronic Value (ChV) > 100.0 mg/L
Daphnid ChV > 100.0 mg/L
Algal ChV > 100.0 mg/L
Biological Fate: No bioconcentration in aquatic organisms and rapid biodegradation/disappearance in the environment, i.e. 40% in 5 days.

LAURAMINE OXIDE: Acute Aquatic Toxicity

Reviewed Category ≤1 mg/L
Algae IC_{50} 0.01 mg/L
Invertebrate EC_{50} 1.01 mg/L
Fish LC_{50} 2.6 mg/L
Biodegradation: % degraded in 28 days ≥60% ThOD/ThCO2 (≥70% DOC)

DOWANOL DPNB:

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 3.78E-07 atm*m3/mole; 25 °C Estimated.
Partition coefficient, n-octanol/water (log Pow): 1.13 Estimated.
Partition coefficient, soil organic carbon/water (Koc): 10 - 21 Estimated.
Persistence and Degradability
Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
Indirect Photodegradation with OH Radicals
Rate Constant Atmospheric Half-life Method
4.97E-11 cm3/s 2.6 h Estimated.
OECD Biodegradation Tests:
Biodegradation Exposure Time Method
91 % 28 d OECD 301E Test
96 % 28 d OECD 302B Test
Theoretical Oxygen Demand: 2.35 mg/mg

ECOTOXICITY
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
Fish Acute & Prolonged Toxicity
LC50, guppy (Poecilia reticulata), static, 96 h: 841 mg/l
Aquatic Invertebrate Acute Toxicity
LC50, water flea Daphnia magna, static, 48 h, immobilization: > 1,000 mg/l

CLR CHEMICAL FATE INFORMATION: 28-day biodegradation. The matter is readily biodegradable. OECD 301D

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Rinse empty bottles and recycle. Dispose of unused product in a permitted hazardous waste management facility following all local, state, and federal regulations.

DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION.
Follow label warnings, since containers may retain some reside of the product.
Processing, use or contamination of this product may change the waste management options. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. State and local disposal regulations may differ from federal disposal regulations.

SECTION 14 - TRANSPORTATION INFORMATION

DOT (Department of Transportation Proper Shipping Name): Not regulated by DOT.
Identification Number: N.A.
Packaging Group: N.A.

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UN Number: N.A.
TDG Classification: Not Regulated
IMDG Classification: Not Regulated
IATA Classification: Passenger – Not Regulated
WHIMS (Canada): This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by CPR.

SECTION 15 – REGULATORY INFORMATION

FEDERAL REGULATIONS:
TSCA INVENTORY STATUS: All components of this product are listed on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA TITTLE III SECTION 311/312 CATEGORY:

IMMEDIATE (ACUTE) HEALTH HAZARARD:	YES
DELAYED (CHRONIC) HEALTH HAZARD:	NO
FIRE HAZARD:	NO
SUDDEN RELEASE OF PRESSURE:	NO
REACTIVE HAZARD:	NO

SARA SECTIONS 302/304/313/HAP: NO

INTERNATIONAL CHEMICAL INVENTORY STATUS:

EUROPEAN UNION (EINECS)	YES
JAPAN (METI)	YES
AUSTRALIA (ACIS)	YES
KOREA (KECL)	YES
CANADA (DSL)	YES
CANADA (NDSL)	NO
PHILIPPINES	YES

STATES RIGHT TO KNOW: California, New Jersey, Pennsylvania, Minnesota, Massachusetts, and Wisconsin. Complies with listed States Right to Know Act.

The following statement is made in order to comply with the California State Drinking Water Act. California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer and/or to cause birth defects and other reproductive harm.

SECTION 16 – OTHER INFORMATION

Precautions to be taken in Handling and Storing: Avoid exposure to excess heat, and prevent from freezing.
Other Precautions: None required.

MSDS ABBREVIATIONS:

N. A.:	Not Applicable
HAP:	Hazardous Air Pollutant
VOC:	Volatile Organic Compound
N. D.:	Not Determined
N.E.:	Not Established

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C:	Ceiling Limit
HAP:	Hazardous Air Pollutant
VOC:	Volatile Organic Compound

Revision: New Formula, GHS Format **October 2012** **R. A. Gaudreault**

Although the information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof, JELMAR offers no representations as to the completeness or accuracy thereof. Information is provided upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will JELMAR be responsible for damages of any nature whatsoever resulting from use of or reliance upon said information.

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