

2/9/14

SAFETY DATA SHEET

Arcot Lime Solve Acid
Lime Cleaner AND
TOILET BOWL CLEANER

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Lime Solve
Product Number: 9640 and other versions of 9640

Manufacturer: Arcot Manufacturing Corporation, 2950 Mowery Road, Houston, Texas, U.S.A. 77045
Emergency Response Telephone: 1-800-633-8253 (Account #9390)
Arcot Customer Service Telephone: 713-413-9700
Website: www.ArcotManufacturing.com

Recommended Use: Cleaning chemical for removing water spots and hard water deposits
Restrictions On Use: Do not use on marble and other natural stones, grout, concrete, wood, painted surfaces, and other sensitive or untested surfaces. Do not mix with other chemicals. Corrosive.

2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Hazard Classification:

- Corrosive to Metals 1 - H290
- Skin Corrosion 1B - H314
- Corrosive (C)
- R34 - Causes burns.
- Acute toxicity - Category 4 - Oral
- Acute toxicity - Category 4 - Inhalation
- Serious eye damage - Category 1

Signal Word: **DANGER!** CORROSIVE



Hazard Statements:

- H318: Causes serious eye damage. (Category 1)
- H314: Causes severe skin burns and eye damage. (Category 1)
- H290: May be corrosive to metals (Category 1)
- H302: Harmful if swallowed or if inhaled. (Category 4)

Precautionary statements:

Prevention:

- P234: Keep only in original container.
- P260: Do not breathe mist/vapors/spray.
- P264: Wash thoroughly after handling.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

P270: Do not eat, drink or smoke when using this product.

P271: Use in a well-ventilated area.

Avoid contact with eyes and skin. Do not inhale or ingest. Causes burns to the gastrointestinal and respiratory tracts. May cause permanent eye damage and blindness.

Response:

P390: Absorb spillage to prevent material damage.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 + P363: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P310: Immediately call a POISON CENTER or doctor/physician.

P321: Specific treatment (see supplemental first aid instructions on the label.)

Storage/Disposal:

P406: Store in a corrosive resistant container with a resistant inner liner.

P405: Store locked up.

P273: Avoid release to the environment.

P501: Dispose of content and/or container to an approved waste disposal plant in accordance with local, regional, national, and/or international regulations.

Store away from children and untrained personnel.

Safety Phrases:

S36: Wear suitable protective clothing.

S37: Wear suitable gloves.

S39: Wear eye/face protection.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Concentration
Water	7732-18-5	Proprietary
Phosphoric Acid	7664-38-2	Proprietary
Other ingredients are nonhazardous and considered trade secrets. The exact percentage of composition has been withheld as a trade secret. This SDS is used for a group of substantially similar mixtures.		

4. FIRST-AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: Move person into fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

In case of skin contact: Take off contaminated clothing and shoes immediately. Wash skin with soap and plenty of water. Consult a physician. Wash contaminated clothing before reuse.

In case of eye contact: Immediately and thoroughly flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If easy to do, remove contact lenses. Continue rinsing eyes and consult a physician, preferably an ophthalmologist.

If swallowed: Never give anything by mouth to an unconscious person. If conscious and alert, rinse mouth with water and drink large quantities of water. Do not induce vomiting. Consult a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed: Corrosive. Causes serious eye damage and pain. Causes severe skin burns and pain. Harmful if swallowed. Irritating if inhaled.

Treatment: Treat symptomatically. If any irritation or symptoms persists, seek medical attention immediately.

5. FIRE-FIGHTING MEASURES

Specific hazards that may develop from this product during fire: Hazardous decomposition and byproducts may include carbon oxides (such as carbon monoxide and carbon dioxide), oxides of phosphorus and toxic, corrosive fumes.

Suitable extinguishing media: Product is not flammable. Water spray, alcohol-resistant foam, dry chemical or carbon dioxide may be used for surrounding fires.

Advice for firefighters: Wear self-contained breathing apparatus and full protective clothing in case of fire. In spill situations, wear chemical protective clothing. Keep unauthorized personnel away. Evacuate residents who are downwind of fire.

Precautions for firefighters: Use water spray to keep fire-exposed containers cool.

General advice: Do not mix with other chemicals. Avoid product contact with strong oxidizing agents, strong reducing agents, bases and certain metals. Avoid contact especially with chlorine bleach to prevent toxic chlorine gas formation and with strong alkalis to prevent violent reaction.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. See section 8 for personal protection. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Methods and materials for containment and cleanup procedures:

Large Spills: Stop the flow of material, if this is safe. Completely contain spilled material with dikes, sandbags, etc., where this is possible. Spilled material may be removed with a vacuum truck. Remaining material may be diluted with water and neutralized with dilute or weak base such as soda ash, sodium bicarbonate or lime, then absorbed and collected. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Following product recovery, flush area with water.

Small Spills: Absorb spill with vermiculite or other inert material. Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. Keep in suitable, closed containers for disposal. Dispose of as hazardous waste. For waste disposal, see Section 13 of the SDS.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Discharge into the environment must be avoided.

7. HANDLING AND STORAGE

Precautions for safe handling: See Sections 2 and 8. Read the SDS and label carefully and completely before handling this product. Do not get in eyes, on skin or on clothing. Do not taste or swallow. Do not breathe mist or vapor. Use only with adequate ventilation. Wear appropriate personal protective equipment. Transfer and storage systems should be compatible and corrosion resistant. Observe good hygiene practices. Do not eat, drink or smoke where the product is being used. Wash thoroughly after handling. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. This product reacts violently with bases liberating heat and causing spattering.

Conditions for safe storage: Keep containers tightly closed, properly labeled and upright to prevent leakage. Store in corrosive resistant containers. Store in a cool, dry, shaded and well-ventilated place away from sunlight and extreme temperatures. Store at temperatures between 55°F and 85°F. Containers which are opened must be carefully resealed. Do not mix with other chemicals. Store away from alkalis and other incompatible materials (see section 10).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Phosphoric Acid (CAS# 7664-38-2)	OSHA PEL	ACGIH TLV	NIOSH
STEL	Not established	3 mg/m ³	Not established
TWA	1 mg/m ³	1 mg/m ³	1 mg/m ³

Appropriate engineering controls: Provide sufficient mechanical ventilation to maintain airborne levels below recommended exposure limits.

Personal Protective Equipment (PPE):

Eye Protection: Wear face shield and eye protection. An emergency eye wash must be readily accessible to the work area. Ensure safety shower is available near all areas of bulk storage, delivery and use.

Skin and Body Protection: Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Contaminated clothing should be removed, then discarded or laundered.

Hand Protection: Wear appropriate impermeable, chemical-resistant gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Wash and dry hands after handling this product.

Protective Material Types: Natural rubber, Neoprene or Nitrile with minimum layer thickness of 0.11 mm and break through time of 480 minutes.

Respiratory protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use an NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

General Industrial Hygiene Considerations: Do not get in eyes or on skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Handle in accordance with good industrial hygiene and safety practices.

Environmental Exposure Controls: Follow best practice for site management and disposal of waste.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Form: liquid
	Color: clear reddish pink or other colors
Odor	odorless or slightly pungent
Odor Threshold	No data available
pH	1
Freezing point	No data available
Initial boiling point	approximately 212°F
Flash point	No data available (Not Flammable)
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	approximately 1.2 g/mL (10 Lb./Gal.) at 25°C (77°F)
Water solubility	completely soluble
Partition coefficient (n-octanol/water)	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Reactivity: Stable at normal temperatures and pressures in original containers. Mixing with water, alkalis or incompatible materials may cause splattering and release of large amounts of heat. Contact with chlorine bleach may release toxic chlorine gas.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: Hazardous polymerization does not occur.

Conditions to avoid: Contact with incompatible materials. Extreme temperatures. Direct sunlight.

Incompatible materials: Strong oxidizing agents, strong reducing agents, bases and certain metals.

Hazardous decomposition products: Oxides of phosphorus. In the event of fire, see section 5.

11. TOXICOLOGICAL INFORMATION

This product is an acid. The primary effects and toxicity of this material are due to its corrosive nature.

Component Information:

Phosphoric Acid (CAS# 7664-38-2)	Acute Toxicity : Ingestion/Oral-Rat LD50 • 1530 mg/kg • Comments: Data for phosphoric acid; Skin-Rabbit LD50 • 2740 mg/kg; Irritation : Eye-Rabbit • 119 mg/kg • Severe irritation, irreversible, burns (corrosive) • Comments: Data for phosphoric acid; Skin-Rabbit • 595 mg/kg 24 Hour(s) • Severe irritation, irreversible, burns (corrosive)
-------------------------------------	--

Likely routes of exposure: Inhalation, Skin, Eye, Ingestion.

Symptoms related to the physical, chemical and toxicological characteristics:

Inhalation

Acute (Immediate): Under normal conditions of use, no health effects are expected.

Chronic (Delayed): Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate): Causes severe skin burns and eye damage.

Chronic (Delayed): Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate): Corrosive. Can cause permanent damage to the cornea, blindness.

Chronic (Delayed): Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate): Causes corrosion, burns to mouth and esophagus, abdominal pain, chest pain, nausea, vomiting, diarrhea, seizures. Aspiration of the swallowed or vomited product can cause severe pulmonary complications.

Chronic (Delayed): Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Information on toxicological effects: Acute toxicity. Harmful if swallowed. (Inconclusive data for dermal and inhalation; data lacking for oral).

Germ cell mutagenicity: No data available

Carcinogenicity: This product is not classified as a carcinogen by NTP, IARC, ACGIH or OSHA. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available

Additional Information: RTECS: Not available

12. ECOLOGICAL INFORMATION

Aquatic toxicity: no data available for this product. In concentrated form, due to its low pH, this product may be harmful to aquatic organisms. Avoid release of unused, concentrated product into the environment.

Biodegradation: no data available for this product. The organic ingredients of this product are biodegradable. Inorganic material are not subject to biodegradation.

Persistence: no data available for this product. Most of the ingredients of this mixture are believed to either be biodegradable or exist in the disassociated state in the environment.

Bioaccumulative potential: no data available for this product. Based on ingredient studies, this product is not expected to bioconcentrate in organisms.

Mobility in soil: no data available for this product.

Other adverse effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product. While acidity of this material is readily reduced in natural waters, the resulting phosphate may persist indefinitely or incorporate into biological systems. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL CONSIDERATIONS

See section 8.

Disposal Instructions: Collect and reclaim or dispose in sealed, corrosive resistant containers such as HDPE containers through a licensed disposal company. Unused product and its container must be disposed of as hazardous waste with an RCRA Hazardous Waste Code "C" Corrosive. Product is highly acidic. It may be neutralized using a weak base. Do not allow this material to drain into sewers or water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents and container in accordance with local, regional, national and international regulations.

Contaminated packaging: If emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

DOT (US): UN1760, Corrosive liquids, n.o.s. (contains Phosphoric acid solution), 8, PGIII.
(When in inner packaging of 1Gallon or less, this product is considered Limited Quantities and is not regulated by DOT.)

Reportable Quantity (RQ): 5000 Lb. for Phosphoric acid (based on 49CFR, APPENDIX A TO §172.101---LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES)

Poison Inhalation Hazard: No

Ground transport only. Do not ship via air.

15. REGULATORY INFORMATION

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA 302 Components (Extremely Hazardous Substances)

None of the ingredients are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: Not listed

SARA 311/312 Hazards: Acute (Immediate) Health Hazard. Chronic (Delayed) Health Hazard.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphoric acid (CAS# 7664-38-2) is listed with Reportable Quantity of 5000 Lb.

16. OTHER INFORMATION

HMIS & NFPA Ratings: Health = 2 Fire = 0 Reactivity = 1

HMIS & NFPA ratings involve data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this SDS must be considered.

Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists

CAS = Chemical Abstract Service

GHS = Globally Harmonized System

HCS = Hazard Communication Standard

LD = Lethal Dose

NIOSH = National Institute for Occupational Safety & Health

OSHA = Occupational Safety and Health Administration

PEL = Permissible Exposure Limit

RTECS = Registry of Toxic Effects of Chemical Substances

STEL = Short Term Exposure Limit (based on 15-minute exposures)

TC = Toxic Concentration

TLV = Threshold Limit Values

TWA = Time Weighted Average limit or ceilings (C) (exposure limit) (based on 8 hour/day, 40 hour/week exposures)

DISCLAIMER: The information contained herein is based upon data obtained from sources believed to be reliable and reflects our best professional judgment. Since it is impossible to anticipate all of the conditions under which our products may be used, we do not guarantee that the recommendations will be adequate for all individuals and situations. Each user of this product should determine the suitability of the product for his or her particular purpose and should comply with all federal, state and local regulations. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. We shall not be held liable for any damage resulting from handling or from contact with the above product or from improper use of our products. We do not provide any warranties, expressed or implied, and do not assume any responsibility for the accuracy or completeness of the data contained herein. This information is offered for your information, consideration, and investigation. You should satisfy yourself that you have all current data relevant to your particular use. We update SDS and labels on a regular basis. Please do not hesitate to contact us for current information.

Revision Date: June 20, 2015