

Revision date 17-Apr-2023

Revision Number 1

1. Identification

Product identifier

Product Name Adams-Evans Lime Buffer

Other means of identification

Product Code(s) 8074

UN number or ID number UN2810

Synonyms No information available

Recommended use of the chemical and restrictions on use

Recommended use Industrial use
Laboratory use
Industrial Manufacturing (all)

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address

Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI 53925 USA
Phone: (920) 623-2140
Fax: (920) 623-2577
www.columbuschemical.com

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC: 1-800-424-9300 for US / 703-527-3887 outside US

Emergency Telephone 911

2. Hazard(s) identification

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Reproductive toxicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 2

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Danger

Hazard statements

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H360 - May damage fertility or the unborn child

H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P264 - Wash face, hands and any exposed skin thoroughly after handling

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

P321 - Specific treatment (see First-Aid Measures on SDS)

P308 + P313 - IF exposed or concerned: Get medical advice/attention

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

P337 + P313 - If eye irritation persists: Get medical advice/attention

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P362 - Take off contaminated clothing and wash before reuse

Precautionary Statements - Storage

P405 - Store locked up

Precautionary Statements - Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

No information available.

3. Composition/information on ingredients**Substance**

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Formula	Molecular Weight
Water	7732-18-5	Balance	H ₂ O	18.00 g/mol
Potassium chloride	7447-40-7	6-8	KCl	74.55 g/mol
Potassium hydroxide	1310-58-3	1-2	KOH	56.11 g/mol
Boric acid	10043-35-3	1-2	H ₃ BO ₃	61.83 g/mol
p-Nitrophenol	100-02-7	1-2	C ₆ H ₅ NO ₃	139.11 g/mol

4. First-aid measures

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Symptoms	May cause redness and tearing of the eyes. Burning sensation.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	No information available.
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.
Other information	Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. Handling and storage**Precautions for safe handling**

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
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8. Exposure controls/personal protection**Control parameters**

Exposure Limits	The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.
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Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Potassium hydroxide	Ceiling: 2 mg/m ³	(vacated) Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³
Boric acid	TWA: 2 mg/m ³ STEL: 6 mg/m ³	(vacated) Ceiling: 15 mg/m ³	-

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.
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Individual protection measures, such as personal protective equipment

Eye/face protection	If splashes are likely to occur, wear safety glasses with side-shields.
Hand protection	Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes or clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Translucent
Color	Yellow-green
Odor	No information available
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	No data available
pH (as aqueous solution)	No data available	No data available
Melting point / freezing point	No data available	No data available
Initial boiling point and boiling range	No data available	No data available
Flash point	No data available	No data available
Evaporation rate	No data available	No data available
Flammability	No data available	No data available
Flammability Limit in Air		No data available
Upper flammability or explosive limits	No data available	No data available
Lower flammability or explosive limits	No data available	No data available
Vapor pressure	No data available	No data available
Relative vapor density	No data available	No data available
Relative density	1.0565	No data available
Water solubility	No data available	No data available
Solubility(ies)	No data available	No data available
Partition coefficient	No data available	No data available
Autoignition temperature	No data available	No data available
Decomposition temperature		
Kinematic viscosity	No data available	No data available
Dynamic viscosity	No data available	No data available

Other information

Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.
Conditions to avoid	None known based on information supplied.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents.
Hazardous decomposition products	None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. May cause redness and tearing of the eyes.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	8,453.90 mg/kg
ATEmix (dermal)	35,483.90 mg/kg
ATEmix (inhalation-gas)	99,999.00 ppm
ATEmix (inhalation-vapor)	99,999.00 mg/l
ATEmix (inhalation-dust/mist)	73.05 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	>90 mL/kg (Rat)	-	-
Potassium chloride	= 2600 mg/kg (Rat)	-	-
Potassium hydroxide	284 mg/kg (Rat)	-	-
Boric acid	3500-4100 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 2.12 mg/L (Rat) 4 h
p-Nitrophenol	= 230 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 4.7 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Classification based on data available for ingredients. Causes skin irritation. May cause skin irritation.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitization	No information available.
Germ cell mutagenicity	No information available.

Carcinogenicity No information available.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Boric acid	-	Group 2A	-	X

Legend**IARC (International Agency for Research on Cancer)**

Group 2A - Probably Carcinogenic to Humans

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity May damage fertility or the unborn child.**STOT - single exposure** No information available.**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.**Target organ effects** Respiratory system, Eyes, Skin.**Aspiration hazard** No information available.**Other adverse effects** No information available.**Interactive effects** No information available.**12. Ecological information****Ecotoxicity**

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Potassium chloride	EC50: =2500mg/L (72h, <i>Desmodesmus subspicatus</i>)	LC50: =1060mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 750 - 1020mg/L (96h, <i>Pimephales promelas</i>)	-	EC50: =825mg/L (48h, <i>Daphnia magna</i>) EC50: =83mg/L (48h, <i>Daphnia magna</i>)
Potassium hydroxide	-	-	-	-
Boric acid	72h EC50: = 40 B/L or 229 mg boric acid/L (<i>Pseudokirchneriella subcapitata</i>)	96h LC50: = 79.7 B/L or 456 mg boric acid/L (<i>Pimephales promelas</i>)	-	48h LC50: = 133 B/L or 760 mg boric acid/L (<i>Daphnia magna</i>)
p-Nitrophenol	EC50: =23.7mg/L (96h, <i>Desmodesmus subspicatus</i>) EC50: 1.95 - 14.6mg/L (72h, <i>Pseudokirchneriella subcapitata</i>) EC50: 2.3 - 7.71mg/L (96h, <i>Pseudokirchneriella subcapitata</i>)	LC50: =30.4mg/L (96h, <i>Pimephales promelas</i>) LC50: =6.6mg/L (96h, <i>Lepomis macrochirus</i>) LC50: =10.4mg/L (96h, <i>Brachydanio rerio</i>) LC50: =14mg/L (96h, <i>Poecilia reticulata</i>) LC50: =7.9mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: =3.8mg/L (96h,	-	EC50: 3.1 - 7.1mg/L (48h, <i>Daphnia magna</i>)

		Oncorhynchus mykiss)		
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Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Potassium hydroxide	0.83
Boric acid	-1.09
p-Nitrophenol	1.95

Other adverse effects No information available.

13. Disposal considerations

Disposal methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

California Hazardous Waste Status This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. Transport information

DOT
UN number or ID number Regulated
 UN2810
Proper shipping name Toxic, liquids, organic, n.o.s. (p-nitrophenol)
Transport hazard class(es) 6.1
Packing group III
DOT Marine Pollutant No

TDG
UN number or ID number Regulated
 UN2810
UN proper shipping name Toxic, liquids, organic, n.o.s. (p-nitrophenol)
Transport hazard class(es) 6.1
Packing group III

ICAO (air)
UN number or ID number Regulated
 UN2810
UN proper shipping name Toxic, liquids, organic, n.o.s. (p-nitrophenol)
Transport hazard class(es) 6.1
Packing group III

IATA
UN number or ID number Regulated
 UN2810
UN proper shipping name Toxic, liquids, organic, n.o.s. (p-nitrophenol)
Transport hazard class(es) 6.1
Packing group III

IMDG
UN number or ID number Regulated
 UN2810

UN proper shipping name	Toxic, liquids, organic, n.o.s. (p-nitrophenol)
Transport hazard class(es)	6.1
Packing group	III

15. Regulatory information

International Inventories

TSCA	Complies.
DSL/NDSL	Complies.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AIC	Contact supplier for inventory compliance status.
NZIoC	Contact supplier for inventory compliance status.

- TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
p-Nitrophenol 100-02-7	1.0

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Potassium hydroxide	1000 lb	-	-	X
p-Nitrophenol	-	-	X	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	Reportable Quantity (RQ)
Potassium hydroxide	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

Boric acid	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
p-Nitrophenol	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Water	-	-	X
p-Nitrophenol	X	X	X
Boric acid	X	-	-
Potassium hydroxide	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards 2	Flammability 0	Instability 0	Special hazards -
HMIS	Health hazards 2 *	Flammability 0	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>	<i>* = Chronic Health Hazard</i>			

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 National Institute of Technology and Evaluation (NITE)
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 World Health Organization

Revision date

17-Apr-2023

Revision Note

No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet