

**SAFETY DATA SHEET**

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

**QUADRATE**

SUPERSEDES:

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product identifier**

**Product Name** QUADRATE

**Other means of identification**

**Product Code** FRT-00183

**Synonyms** None

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Nutrient.

**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Manufacturer Address**

LOVELAND PRODUCTS, INC.

P.O. Box 1286

Greeley, CO 80632-1286

**Emergency telephone number**

**Company Phone Number** 1-888-LPI-CUST (574-2878)

**Emergency Telephone** Chemtrec 1-800-424-9300

Medical Emergencies: 1-866-944-8565

US regulations require reporting spills of this material that could reach any surface waters.

The toll-free phone number for the US Coast Guard National Response Center is

1-800-424-8802

**2. HAZARDS IDENTIFICATION**

**Classification**

**OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4 - (H302)
Acute toxicity - Inhalation (Gases)	Category 4 - (H332)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 1 Sub-category B - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Carcinogenicity	Category 1B - (H350)

**Label elements**



**Signal word**

**DANGER**

**Hazard statements**

H314 - Causes severe skin burns and eye damage

H332 - Harmful if inhaled

H350 - May cause cancer



**SAFETY DATA SHEET**

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

**QUADRATE**

SUPERSEDES:

**Precautionary Statements - Prevention**

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P281 - Use personal protective equipment as required
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P271 - Use only outdoors or in a well-ventilated area
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/physician
- P312 - Call a POISON CENTER or doctor/physician if you feel unwell
- P330 - Rinse mouth
- P331 - Do NOT induce vomiting
- P363 - Wash contaminated clothing before reuse

**Precautionary Statements - Storage**

- P405 - Store locked up

**Precautionary Statements - Disposal**

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

**Hazards not otherwise classified (HNOC)**  
Not applicable

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Mixture

Chemical Name	CAS No	Weight-%	GHS Classification	Trade Secret
Ammonia	7664-41-7	5 - 10	Acute Tox. 3 (H331) Skin Corr. 1B (H314) Aquatic Acute 1 (H400) Flam. Gas 2 (H221) Press. Gas	*
Potassium Hydroxide	1310-58-3	1 - 5	Acute Tox. 4 (H302) Skin Corr. 1A (H314)	*
Phosphoric acid	7664-38-2	1 - 5	Skin Corr. 1B (H314)	*
Glacial Acetic	64-19-7	1 - 5	Skin Corr. 1A (H314) Flam. Liq. 3 (H226)	*
Ammonium nitrate	6484-52-2	1 - 5		*
Ammonium hydroxide	1336-21-6	0.1 - 1	Skin Corr. 1B (H314) Aquatic Acute 1 (H400)	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.  
OSHA Hazard Communication 29 CFR 1910.1200



## SAFETY DATA SHEET

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

QUADRATE

SUPERSEDES:

### 4. FIRST AID MEASURES

#### Description of first aid measures

<b>General advice</b>	Get medical attention if symptoms occur.
<b>Eye contact</b>	Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
<b>Skin contact</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
<b>Inhalation</b>	Remove to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferable by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
<b>Ingestion</b>	Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

#### Most important symptoms and effects, both acute and delayed

**Symptoms** No information available.

#### Indication of any immediate medical attention and special treatment needed

**Treatment:** Treat symptomatically. Symptoms may be delayed. Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also call 1-866-944-8565 for emergency medical treatment information.

**Note to physicians** No specific antidote. Treat symptomatically.

**Antidotes** No data available

### 5. FIRE-FIGHTING MEASURES

#### Suitable extinguishing media

Use extinguishing agent suitable for type of surrounding fire, Use CO<sub>2</sub>, dry chemical, or foam

#### Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

#### Explosion data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

#### Protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.



## SAFETY DATA SHEET

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

QUADRATE

SUPERSEDES:

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

#### Environmental precautions

**Environmental precautions** Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

#### 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** Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

### 7. HANDLING AND STORAGE

#### Precautions for safe handling

**Advice on safe handling** Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

#### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Incompatible materials** Incompatible with strong acids and bases. Incompatible with oxidizing agents.



**SAFETY DATA SHEET**

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

**QUADRATE**

SUPERSEDES:

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

**Appropriate engineering controls**

**Engineering Controls** Minimize exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Tight sealing safety goggles. Face protection shield.

**Skin and body protection** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Respiratory protection** Dependent on job function. If vapors or dusts exceed acceptable levels, wear a MSHA/NIOSH approved air-purifying respirator with any cartridges/filters approved for pesticides. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection Standard. Wear a supplied air respirator if exposure concentrations are unknown.

**General Hygiene Considerations** When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.



## SAFETY DATA SHEET

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

QUADRATE

SUPERSEDES:

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Aqueous solution
Color	Light green
Odor	Characteristic
Odor threshold	No data available

<u>Property</u>	<u>Values (Remarks - Method)</u>
pH	No data available
Melting point / freezing point	No data available
Boiling point	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Flammability Limit in Air	
Upper flammability limit:	No data available
Lower flammability limit:	No data available
Vapor pressure	No data available
Vapor density	No data available
Specific Gravity	1.213 g/ml
Water solubility	No data available
Solubility in other solvents	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

#### Other Information

VOC Content (%)	No data available
Density	10.13lbs/gal

**Note:** These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.



## SAFETY DATA SHEET

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

QUADRATE

SUPERSEDES:

### 10. STABILITY AND REACTIVITY

#### Reactivity

No data available

#### Chemical stability

Stable under recommended storage conditions.

#### Possibility of Hazardous Reactions

None under normal processing.

#### Conditions to avoid

Exposure to air or moisture over prolonged periods.

#### Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

#### Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.



**SAFETY DATA SHEET**

**QUADRATE**

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

SUPERSEDES:

**11. TOXICOLOGICAL INFORMATION**

**Acute toxicity of the formulated product:**

Chemical Name	Oral LD <sub>50</sub>	Dermal LD <sub>50</sub>	Inhalation LC <sub>50</sub>
Ammonia	= 350 mg/kg ( Rat )		= 2000 ppm ( Rat ) 4 h
Potassium Hydroxide	= 284 mg/kg ( Rat )		
Phosphoric acid	= 1530 mg/kg ( Rat )	= 2740 mg/kg ( Rabbit )	> 850 mg/m <sup>3</sup> ( Rat ) 1 h
Glacial Acetic	= 3310 mg/kg ( Rat )	= 1060 mg/kg ( Rabbit )	= 11.4 mg/L ( Rat ) 4 h
Ammonium nitrate	= 2217 mg/kg ( Rat )		> 88.8 mg/L ( Rat ) 4 h
Ammonium hydroxide	= 350 mg/kg ( Rat )		

Chemical Name	Skin corrosion/irritation	Eye damage/irritation	Respiratory sensitization	Skin sensitization
Ammonia 7664-41-7	Category 1			
Potassium Hydroxide 1310-58-3	Category 1			
Phosphoric acid 7664-38-2	Category 1			
Glacial Acetic 64-19-7	Category 1			
Ammonium hydroxide 1336-21-6	Category 1			

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

**Germ cell mutagenicity**

No information available.

**Carcinogenicity**

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

Chemical Name	ACGIH	IARC	NTP	OSHA
Ammonium nitrate 6484-52-2	-	Group 2A	-	X

*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**

No information available.

**STOT - single exposure**

No information available.

**STOT - repeated exposure**

No information available.

**Chronic toxicity**

Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

**Target Organ Effects**

Eye damage/irritation, Respiratory system, Skin, Teeth.

**Aspiration hazard**

No information available.

**Information on likely routes of exposure**

**Product Information**

No data available

**Inhalation**

No data available.

**Eye contact**

No data available.

**Skin contact**

No data available.

**Ingestion**

No data available.





**SAFETY DATA SHEET**

**QUADRATE**

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

SUPERSEDES:

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Ammonia 7664-41-7	-	LC50 0.44 mg/L 96 h Cyprinus carpio LC50 0.26 - 4.6 mg/L 96 h Lepomis macrochirus LC50 1.17 mg/L 96 h Lepomis macrochirus LC50 0.73 - 2.35 mg/L 96 h Pimephales promelas LC50 5.9 mg/L 96 h Pimephales promelas LC50 1.5 mg/L 96 h Poecilia reticulata LC50 1.19 mg/L 96 h Poecilia reticulata	LC50 25.4 mg/L 48 h Daphnia magna
Potassium Hydroxide 1310-58-3	-	LC50 80 mg/L 96 h Gambusia affinis	-
Phosphoric acid 7664-38-2	-	LC50 3 - 3.5 mg/L 96 h Gambusia affinis	EC50 4.6 mg/L 12 h Daphnia magna
Glacial Acetic 64-19-7	-	LC50 79 mg/L 96 h Pimephales promelas LC50 75 mg/L 96 h Lepomis macrochirus	EC50 65 mg/L 48 h Daphnia magna EC50 47 mg/L 24 h Daphnia magna
Ammonium nitrate 6484-52-2	-	LC50 65 - 85 mg/L 48 h Cyprinus carpio	-
Ammonium hydroxide 1336-21-6	-	LC50 8.2 mg/L 96 h Pimephales promelas	EC50 0.66 mg/L 48 h water flea EC50 0.66 mg/L 48 h Daphnia pulex

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes**

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrecycle.org/>. Do not contaminate water, food or feed by storage or disposal.

**Contaminated packaging**

Do not reuse container.



**SAFETY DATA SHEET**

**QUADRATE**

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

SUPERSEDES:

**14. TRANSPORT INFORMATION**

**DOT**

UN/ID no

Proper shipping name

U.S. Surface Freight Classification:

Not regulated

Not regulated

FERTILIZING COMPOUNDS (MANUFACTURED  
FERTILIZERS), NOI, LIQUID (NMFC 68140, SUB 6; CLASS 70)



**SAFETY DATA SHEET**

**QUADRATE**

SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

SUPERSEDES:

**15. REGULATORY INFORMATION**

<u><b>NFPA</b></u>	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties - Personal protection X	
<u><b>HMIS</b></u>	Health hazards 3	Flammability 0	Physical hazards 0		
	0 - Least	1 - Slight	2 - Moderate	3 - High	4 - Severe

**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 %
Ammonia - 7664-41-7	1.0
Ammonium nitrate - 6484-52-2	1.0

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**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
Ammonia 7664-41-7	100 lb	-	-	X
Potassium Hydroxide 1310-58-3	1000 lb	-	-	X
Phosphoric acid 7664-38-2	5000 lb	-	-	X
Glacial Acetic 64-19-7	5000 lb	-	-	X
Ammonium hydroxide 1336-21-6	1000 lb	-	-	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	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ammonia 7664-41-7	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Potassium Hydroxide 1310-58-3	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
Phosphoric acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Glacial Acetic 64-19-7	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Ammonium hydroxide 1336-21-6	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals



**SAFETY DATA SHEET**  
SDS REVISIONS:

DATE OF ISSUE: 09/28/2018

**QUADRATE**  
SUPERSEDES:

U.S. EPA Label Information

**16. OTHER INFORMATION**

**Prepared By** Product Stewardship and Regulatory Affairs

**Reviewed By** Safety, Health and Environment

**Issue Date** 09/28/2018

**Revision Date** 09/28/2018

**Revision Note**

New

**QUADRATE** is a trademark of Loveland Products, Inc.

Disclaimer

This safety data sheet was developed from information on the constituent materials identified herein and does not relate to the use of such materials in combination with any other material or process. No warranty is expressed or implied with respect to the completeness or ongoing accuracy of the information contained in this data sheet, and LOVELAND PRODUCTS, INC. disclaims all liability for reliance on such information. This data sheet is not a guarantee of safety. Users are responsible for ensuring that they have all current information necessary to safely use the product described by this data sheet for their specific purpose.

**End of Safety Data Sheet**