

Safety Data Sheet according to OSHA-GHS (29 CFR part 1910.1200 HCS 2012)

**Section 1: Identification and Company Identification**

**Product identifier:** Liquid Base Liquid Fertilizer

**Other Means of Identification:** Liquid Base

**Recommended Use and Restrictions on use:** Liquid fertilizer for agricultural / commercial use.

**Details of Importer:** Aptus Plant Tech USA  
PO Box 12032  
Costa Mesa, CA 92627

**Emergency Phone Number:** Tel: +1 866 277 2816  
USA Poisons Information (24 hours / 7 days) ☎ (800) 222-1222

**Section 2: Hazard(s) Identification**

**Hazard Classification:**  
Skin corrosion – category 1B  
Eye irritation – category 2A

**Signal Word(s):** DANGER

**Hazard Statements:**  
H314 (Causes severe skin burns and eye damage)

**Pictograms:**



**Precautionary Statements:**

**IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting.

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

**IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Immediate contact emergency service. Specific treatment: Rinse with copious amounts of running water

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

**Description of other hazards:** None

**Section 3: Composition/ Information on Ingredients**

<b>Chemical Name</b>	<b>CAS#</b>	<b>Conc.</b>
Proprietary Ingredients determined not to be hazardous at that concentration	-	>90%

Phosphorus pentoxide	1314-56-3	>15%
Ammonium Nitrate	6484-52-2	>10%

**Section 4: First-Aid Measures**

**First Aid Instructions:** Consider your own safety first.

**After skin contact:** Wash with plenty of running water. If skin irritation occurs: Get medical advice/attention.

**After eye contact:** Rinse cautiously with running water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

**After inhalation:** Remove to fresh air; rinse mouth and spit, **For advice**, contact a Poisons Information Centre (e.g. phone (800) 222-1222; or a doctor.

**After swallowing:** Rinse mouth and SPIT, if conscious give a glass of water. **For advice**, contact a Poisons Information Center (800) 222-1222, or a doctor.

**Symptoms caused by exposure:** Local irritation effects can be anticipated due to corrosive nature.

**Medical Attention / Special Treatment:** Neutralize the weak acid solution using dilution, see section 11 for additional data.

**Section 5: Fire-Fighting Measures**

**Suitable extinguishing agents:** As merited by packaging &/or surrounding materials, including Foam. Dry powder. Carbon dioxide. Water spray. Sand.

**Special protective equipment for firefighters:** None identified

**Section 6: Accidental Release Measures**

**Personal precautions:** Keep only in original container. Obtain special instructions before use, Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling.

**Measures for environmental protection:** Concentrate as supplied should not enter to waterways, may cause localized effects.

**Measures for cleaning/collecting:**

Take off contaminated clothing and wash it before reuse.  
Rinse any exposed metal surfaces thoroughly clean after use.  
Absorb any spillage to prevent material damage.

**Section 7: Handling and Storage**

**Handling:** Ensure adequate ventilation, all ways add this product to pre-dispensed water. Use only as directed.

**Storage:** Keep tightly closed in original container

**Section 8: Exposure Controls/Personal Protection**

**OSHA PEL:** Phosphoric acid TWA 1 mg/m3

**NIOSH REL:** TWA 1 mg/m3 ST 3 mg/m3

**Engineering Control:** as merited for workplace and local conditions

**General protective and hygienic measures:** Wear protective gloves/protective clothing/eye protection/face protection Safety glasses. Face shield where there is a risk of leaks or splashes. Recommended: Personal eye-protection (CEN: EN166) – liquid proof glasses. Wear suitable protective clothing. Impervious footwear must be worn. Gloves. Butyl

rubber (IIR) / (0,7 mm). Nitrile rubber (NBR) / (0,4 mm). Chloroprene rubber (CR) / (0,5 mm). Mist formation: aerosol mask with filter type P2.

### Section 9: Physical and Chemical Properties

**Appearance:** Blue Liquid  
**Odor:** Mild, slightly acidic  
**Odor threshold:** Not Applicable  
**pH:** 4  
**Melting point/melting range:** Not determined  
**Boiling point/boiling range:** Not determined  
**Flash point:** >100°C  
**Evaporation rate:** Not established  
**Flammability:** Not classified as flammable  
**Upper/lower flammability or explosive limits:** Not established  
**Auto ignition temperature:** Not established  
**Danger of explosion:** Not established  
**Vapor pressure:** Not established  
**Vapor density:** Not established  
**Viscosity:** Not determined  
**Relative density:** ~ 1.2 g/mL  
**Solubility in/Miscibility with water:** water soluble

### Section 10: Stability and Reactivity

**Reactivity:** Will react with bases, store and use away from other dangerous goods.  
**Chemical stability:** Formulated to be stable under conditions of supply  
**Conditions to avoid:** Excessive heat, contamination with other products  
**Incompatible materials:** May be corrosive to some metals. Keep substance away from: strong bases. reducing agents and oxidizing agents, against which it can ignite and generate toxic gases.  
**Hazardous decomposition products:** On burning: release of toxic and corrosive gases/vapors (phosphorus oxides).

### Section 11: Toxicological Information

#### 11.1 Known Toxicological Information <15% Phosphoric acid (CAS 1314-56-3)

**Acute toxicity:** Topical LD<sub>50</sub> 1260 mg/kg/bw, Oral LD<sub>50</sub> 2000 mg/kg/bw, Inhalation LD<sub>50</sub> 3846mg/m<sup>3</sup> in air

#### Potential routes of exposure/potential health effects

**Skin:** At pH (as supplied) the solution is weakly irritating. 75 % phosphoric acid is not irritating to intact skin. Phosphoric acid solutions (10 % and 17 % in water) were not an eye irritant in rabbits. However, solutions from 75 % to 85 % phosphoric acid were corrosive to rabbit eyes. A modified skin irritation study was performed using 75 % phosphoric acid. Since the test material was a concentrated acid, only one animal was used in the study for humane reasons. One New Zealand White rabbit was anesthetized with Surital (0.73 ml/kg, i.v.). The test material (0.5 ml) was in contact with shaved, intact skin for 4 hours under a semi-occlusive wrap. Since no corrosion was immediately evident, the animal was allowed to recover from anaesthesia. Skin irritation was scored by the method of Draize\* at 4.5, 24 and 48 hours after dosing.

**Eye:** Phosphoric acid solutions (10 % and 17 % in water) were not an eye irritant in rabbits. While OECD classifies these substances as irritating to eyes data obtained from SIDS 2011 provides little indication of this.

**Respiratory or skin sensitization:** No information on skin or respiratory sensitization is available.

**Ingestion:** Prediction for man on acute noxious risks from contact with mucous membranes = weakly irritating

**Carcinogenic effects:** There is no reliable information on the carcinogenic potential of phosphoric acid in animals or humans.

**Mutagenic effects:** Phosphoric acid (CAS No.: 7664-38-2) did not show the chromosome aberrations regardless of application of metabolic activation system in the chromosome aberration assay system using Chinese hamster lung cell (CHL/IU), under the conditions of study.

**Reproductive toxicity:** The NOEL value for reproductive toxicity was estimated to be 500 mg/kg bw/day.

**Target organs:** No data

**Other:** No data

### **11.2 Known Toxicological Information <5% Ammonium Nitrate (CAS 6484-52-2)**

**Acute toxicity:** No oral toxicity was reported in 12 adult volunteers administered a single oral dose of 150 mg/kg bw of the chemical. No hematological effects, increase of methemoglobin or formation of N-nitroso compounds were reported (OECD 2007; REACH).

The chemical is reported to be of low acute toxicity through oral route of exposure. The lowest acute oral median lethal dose (LD50) in rats was reported to be >2000 mg/kg bw

#### **Potential routes of exposure/potential health effects**

**Skin:** The chemical is reported to be of low acute toxicity through dermal route of exposure. The LD50 values in rats were reported to be >5000 mg/kg bw (OECD 2007).

**Eye:** There is sufficient evidence to classify the chemical as an eye irritant (R36; irritating to eyes). In an OECD guideline study (TG 405), 100 mg of the chemical was applied to the eyes of rabbits over a 24 hour exposure period. It was reported that animals tested had an average score for redness of the conjunctivae of >2.5 during the first 3 days after exposure. The effects were reported to be fully reversible within 7-10 days (REACH). In another study in rabbits, the chemical was reported to be moderately irritating to the eyes, causing conjunctival effects and mild iritis (inflammation), although no corneal effects were noted. The effects were reported to be fully reversible after 7 days (REACH).

**Inhalation or Skin Sensitization:** While no data are available for this chemical, no significant adverse effects were reported following skin sensitization exposure to another nitrate compound which contained both constituent ions of the chemical. In a skin sensitization study (local lymph node assay: OECD TG 429), mice were exposed to calcium ammonium nitrate at doses of 0 %, 10 %, 25 % and 50 % (five animals per/dose) on three consecutive days. The test groups had calcium ammonium nitrate applied directly to the dorsal surface of both ears. While erythema was shown to occur in all animals at 50 % and in one animal at 25 %, the stimulation index (SI) for skin sensitization was reported to be <3. Therefore the chemical is not considered to be a skin sensitizer. Additionally, no change in body weight, no mortality, no systemic toxicity, or oedema was reported for any treatment group of animals (REACH).

**Ingestion:** Unlikely to be specifically toxic

**Carcinogenic effects:** While no data are available for this chemical, no carcinogenic effects were reported following exposure to sodium nitrate and ammonium chloride (REACH; NICNAS b). In a carcinogenicity study in rats (50/group/sex), sodium nitrate was administered via the diet at 0 %, 2.5 %, and 5 % for 104 weeks. The number of animals with tumors were reported to be 94 %, 100 % and 96 % for males; and 92 %, 86 % and 80 % for females, for each respective dose group. No increased incidence of tumors in treatment group animals was reported when compared with control animals (Maekawa et al.; OECD 2007). It is noted that nitrates taken up in food may be involved in the formation of N-nitroso compounds that are known mutagens or carcinogens. However, no positive relationship has been found between cancer incidence and nitrate intake in several epidemiological studies (OECD 2007). Additionally, formation of N-nitroso compounds was not observed following ingestion of the chemical in humans (refer to sections **Observations in Humans under Acute Toxicity and Repeat Dose Toxicity**). In another study (OECD TG 251), ammonium chloride was not reported to be carcinogenic in rats. While chemical induced chronic metabolic acidosis was reported, no treatment related carcinogenic effects were observed (NICNAS b).

**Mutagenic effects:** The chemical is not expected to be genotoxic. The chemical tested negative in a number of in vitro genotoxicity tests. These included bacterial reverse mutation assays (OECD TG 471) using *S. typhimurium* strains TA 1535, TA 1537, TA 1538, TA 98 and TA 1000 (OECD 2007; REACH).

**Reproductive toxicity:** While no data are available for this chemical, no reproductive or developmental effects were reported following oral exposure to potassium nitrate and ammonium chloride (OECD 2007; REACH; NICNAS b). In a combined reproduction/developmental toxicity study (OECD TG 422), male and female SD rats (five males/group/dose; 10 females/group/dose) were exposed to potassium nitrate via oral gavage at 0, 250, 750 and 1500 mg/kg bw/day for 28 days (males) and from 14 days pre-mating until day four of lactation (females). No deaths or treatment related effects on mating performance, fertility, gestation length, gestation index, litter size, offspring survival, sex ratio or offspring body weight were reported. There were no reported changes in body weight or food consumption. The NOAEL for reproduction was reported to be 1500 mg/kg bw (OECD 2007; REACH). It was reported that no developmental toxic or teratogenic effects were found in a non-guideline study in SD rats exposed to ammonium chloride solution via oral administration at 8.9 mg/kg bw/day on days 7-10 of gestation. No fetal malformations or fetal deaths were reported at day 20 of gestation. While inhibited fetal growth was reported this was attributed to maternal effects of metabolic acidosis (NICNAS b).

**Target organs:** While no data are available for this chemical, no significant adverse effects were reported following repeated oral exposure to potassium nitrate or ammonium chloride (OECD 2007; REACH; NICNAS b). In an OECD guideline study (TG 422), male and female rats (five/sex/dose) were exposed to potassium nitrate through oral gavage for 28 days at 0, 250, 750 and 1500 mg/kg bw/day. No deaths or treatment related clinical signs were reported. There were no changes in body weight, food consumption or motor function. An increase in blood levels of urea, nitrogen and phosphorous were reported to be non-treatment related, due to the absence of renal dysfunction. The NOAEL for this study was reported to be 1500 mg/kg bw/day (OECD 2007; REACH). In a repeat dose oral toxicity study (TG 408), ammonium chloride was administered to male and female Wistar rats (10/sex/group) via oral feed at 2 % (1695.7 mg/kg bw/day) and 4.1 % (3372.6 mg/kg bw/day) for 13 weeks. While reduced body weights were reported, no signs of systemic toxicity were observed. The NOAEL for this study was reported to be 1695.7 mg/kg bw/day (NICNAS b).

**Exposure Level & Health Effects:** In a study on 12 human volunteers who orally ingested 7-10 g of the chemical, it was reported that, following intestinal absorption, the ammonium ions were converted to urea through the liver and then excreted in urine. Increased levels of nitrate in blood, urine and saliva were detected after ingestion of the chemical; nitrate and nitrite levels in saliva ranged from 4 to 43 mmol/L 2-6 hours after ingestion. An average of 75 % of administered nitrate was reported to be excreted in urine within 24 hours (HSDB; OECD 2007).

**Other:** Threshold for security sensitive ammonium nitrate (SSAN) 45%

## Section 12: Ecological Information

**Ecotoxicity:** Acidity can be neutralized by dilution.

**Mobility:** No data available.

**Biodegradation:** While the acidity can be neutralized by the natural hardness of water, phosphate may persist indefinitely.

**Bioaccumulation:** Not applicable.

**Other effects:** No data.

## Section 13: Disposal Considerations

**Disposal Containers & Methods:** Rinse container; dispose as permitted by local jurisdiction.

**Physical/chemical properties that may affect disposal options:** None identified.

**Effects of sewage disposal:** Diluted solutions are unlikely to contribute to issues of concern.

**Special precautions for incineration or land fill:** Diluted solutions are unlikely to contribute to issues of concern.

## Section 14: Transport Information

**DOT regulations:** Regulated by the U.S. Department of Transportation as a hazardous material.

- **UN Number:** 2071
- **Proper Shipping Name/Technical Name:** AMMONIUM NITRATE BASED FERTILIZER
- **Hazard class:** 9
- **Packaging Group:** III

**Section 15: Regulatory Information**

**US Federal Regulations:** This product meets the criteria of the Federal OSHA Hazard Communication Standard. (29 CFR 1910.1200)

**TSCA (Toxic Substances Control Act):** Not listed on the TSCA inventory.

**NFPA HAZARD RATING:**

Health: 0  
Flammability: 1  
Reactivity: 0  
Specific Hazard: COR

**SARS Title III Hazard Categories:** No

**Sara 302 extremely hazardous substance:** No

**SARA Section 355 (extremely hazardous substances):** No

**SARA Section 313 (specific toxic chemical listings):** The following components are subject to reporting levels established by SARA Title III, Section 313:

Ammonium nitrate CAS 6484-52-2

**CERCLA HAZARDOUS SUBSTANCE LISTED (40 CFR 302.4):** This product does not contain chemicals which have a reportable quantity (RQ) under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs):** Not regulated

**US STATE REGULATIONS – CAS# 1314-56-3 & 6484-52-2 can be found on the following state right to know lists:** Massachusetts, Pennsylvania, New Jersey.

**California Prop. 65:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**CANADIAN DOMESTIC SUBSTANCES LIST – None**

**WHMIS classification:** Not Applicable

**Section 16: Other Information**

The attention of the user is drawn to the possible risks incurred by using the product for any of the purpose other than for which it was intended. The information contained herein related only to the specific material identified.

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