

文通钾盐集团有限公司



MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

1.1 IDENTIFICATION OF THE PRODUCT

Designation	Fertilizer
Trade name	Calcium Ammonium Nitrate
Commonly used	Nutrient, Foliar fertilizer, Fertilizer
Synonyms	
CAS Number	CAS No. 15245-12-2
EINECS Number	239-289-5
EINECS Number	239-289-5
Molecular Formula	$\text{NH}_4\text{NO}_3 \cdot 5\text{Ca}(\text{NO}_3)_2 \cdot 10\text{H}_2\text{O}$

1.2 COMPANY

Manufacturer Name	WENTONG POTASSIUM SALT GROUP CO., LTD.
Address	22F, WENTONG BUILDING NO.739, KUNMING ROAD, YANGPU, SHANGHAI, CHINA
Contact Numbers	Tel : 86-021-80179166 Fax : 86-021-80179292

2. H.S. CODE : 3102.6000

3. COMPOSITION / INFORMATION ON INGREDIENTS

Product is ammonium nitrate calcium nitrate decahydrate with Chemical Formula: $\text{NH}_4\text{NO}_3 \cdot 5\text{Ca}(\text{NO}_3)_2 \cdot 10\text{H}_2\text{O}$ and contains 8.3% of ammonium nitrate and 13.6% of water of crystallization (by mass).

4. HAZARDS IDENTIFICATION

4.1 EMERGENCY OVERVIEW

CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

4.2 POTENTIAL HEALTH EFFECTS

INHALATION:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

INGESTION:

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Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Small quantities are unlikely to cause toxic effect. Large quantities may give rise to gastro-intestinal disorders and in extreme causes, formation of methaemoglobin (blue baby syndrome) and cyanosis (indicated by blueness around the mouth) may occur.

SKIN CONTACT:

Causes irritation to skin. Symptoms include redness, itching, and pain.

EYE CONTACT:

Causes irritation, redness, and pain.

CHRONIC EXPOSURE: No information found.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

Persons with other blood dyscrasias, especially ANEMIA, might have increased sensitivity. Persons exposed to other oxidizing agents or other agents known to induce methemoglobinemia, such as aniline, nitrobenzene, or other nitrates, or those exposed to agents known to deprive the body of oxygen, such as CO., LCH₃Cl, H₂S, CN, or asphyxiates, might be hypersusceptible. Pre-existing heart disease might be aggravated by exposure to nitrates.

FIRE AND THERMAL DECOMPOSITION PRODUCTS:

Inhalation of decomposition gases, containing nitrogen oxides and ammonia, can cause irritation and corrosive effects on the respiratory system. Some lung effects (pulmonary oedema) may be delayed.

4. FIRST AID MEASURES

INHALATION :

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

INGESTION:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

SKIN CONTACT:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.

EYE CONTACT:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.



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5. FIRE FIGHTING MEASURES

FIRE:

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

EXPLOSION:

Can cause explosions in contact with combustible dusts or vapors; occasionally explosive by shock or friction. Sensitive to mechanical impact.

FIRE EXTINGUISHING MEDIA:

Use any means suitable for extinguishing surrounding fire.

SPECIAL INFORMATION:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Water spray may be used to keep fire exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills : Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Small amounts of residue may be flushed to sewer with plenty of water.

7. Handling and Storage

Keep in a tightly closed container, stored in cool, dry, ventilated area. Protect against physical damage and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Containers of this materials may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Airborne exposure limits: None established.

Ventilation system:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of

Recommended Practices, most recent edition, for details.



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Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn.

If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White granules
Odor	Odorless
Solubility	1895g in 1L of water
PH Value	5.7-7.0
Boiling Point	Could decompose before boiling
Melting Point	45°C (113F)
Vapor Density (Air=1)	A solid
Vapor Pressure (mm Hg)	Hygroscopic solid (water vapor pressure : 0.068lb/in2)
Evaporation Rate (BuAc=1)	No information found

10. STABILITY AND REACTIVITY

STABILITY:

Unstable. Exposure to heat may result in build-up of dangerous pressures. Other calcium nitrate compounds are strong oxidizers and reacts violently upon contact with many organic substances, particularly textile and paper.

HAZARDOUS DECOMPOSITION PRODUCTS:

Oxides of nitrogen.

HAZARDOUS POLYMERIZATION:

Will not occur.

INCOMPATIBILITIES:

Combustible materials, organic materials, powdered metals, ammonia, hydrazine, reducing agents.

CONDITIONS TO AVOID:

Heat, flame, ignition sources, shock and incompatibles.

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11. TOXICOLOGICAL INFORMATION

See section 3.2.

	LD50 and route	More toxicity data	Toxicity and route	EPA TSCA	Human systemic effects	Pre-existing conditions	Carcl= nogen
NH_4NO_3 CAS NO. 6484-52-2	2217 mg/kg oral, rat	NIO*	Ingestion can cause methemoglobinemia that could result in death	Reported	Interfere with the O2 carrying capacity of the blood	Anemia, heart disease, exposure to other oxidizing agents	Not IARC Listed
$\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ CAS No. 13477-34-4	3900 mg/kg oral, rat	Eye rabbit 500 mg/24H MLD	Moderately toxic by Ingestion A skin and eye irritant	NIO*	NIO*	NIO*	Not IARC listed

*NIO No Information Found

Information (for $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ (CAS No.13477-34-4) from SAX's Dangerous Properties of Industrial Materials, 9th edition and other MSDS's

Information for NH_4NO_3 from SAX and other MSDS's

12. ECOLOGICAL INFORMATION

A) MOBILITY

Ammonium and nitrate ions are mobile (the nitrate ion more so than ammonium ion) and will leach from soils and into water-courses. Calcium ion is less mobile and will remain attached to soil constituents.

B) PERSISTENCE / DEGRADABILITY

Ammonium ion is toxic to plants in large concentrations, Ammonium ion will convert to the nitrate form with accompanying acidification of the soil. Nitrate ion will leach more easily than ammonium ion, may pollute water courses and are toxic to people (especially children) at high concentrations (methemoglobinemia). Nitrate ion will become part of the natural Nitrogen cycle, by converting to N_2 or by becoming part of organisms.

c) BIO-ACCUMULATION

No information found.

d) ECOTOXICITY



No information is available for the molecule but some information is available for the different components of the molecule.

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NH_4NO_3 : LD50 for *Aspergillus niger* is 15 mg/l/40h at 36°C

$\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ (but CAS No.10124-37-5) : LD50 for fish >100mg /l/96h (from a JT Baker MSDS)

13. TRANSPORT INFORMATION

Special provision 208 of IMDG CODE states: "The commercial grade of calcium nitrate fertilizer that consists mainly of double salt (calcium nitrate and ammonium nitrate) and contains not more than 10% of ammonium nitrate and at least 12% of water of crystallization (by mass) is considered not-dangerous."

14. Other Information

CANTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CAUSES IRRITATION TO SKIN EYES AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

15. Label Precautions:

Keep from contact with clothing and other combustible materials.

Do not store near combustible materials.

Avoid contact with eyes, skin and clothing.

Store in a tightly closed container.

Wash thoroughly after handling.

Avoid breathing dust.

Use only with adequate ventilation.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

16. Product Use:

Laboratory Reagent.

Disclaimer: Although reasonable care and diligence have been exercised with the compilation of this data sheet, and the information is given in good faith, it is for the User



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