

Producer: **Pakarab Fertilizers Limited**

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Plant Site: Pakarab Fertilizers Ltd; Khanewal Road, Multan-Pakistan.
Tel.: +92-61-9220022, Fax: +92-61-9220021, Web: www.fatima-group.com
Head office: E-110, Khayaban-e-Jinnah, Lahore-Cantt; Pakistan.
Tel.: +92-42-111-Fatima (111-328-462), Fax: +92-42-36621389

Calcium Ammonium Nitrate

Colorless crystals; odorless.
Irritating to eyes/skin/
respiratory tract.
Also causes: difficulty
breathing, acidic urine,
systemic acidosis, and
abnormal hemoglobin.
Strong oxidizer capable of
igniting combustible materials.



CAS No. 6484-52-2

IDENTIFICATION OF PRODUCT:

Prilled Calcium Ammonium Nitrate Fertilizer

Product Code: **PCAN**

1. Prilled Calcium Ammonium Nitrate

1.1 General Information:

Inorganic Fertilizer which do contain Nitrogen; a mixture of Ammonium Nitrate and Calcium Carbonate

1.2 Company Identification (Name & Address):

PAKARAB FERTILIZERS Ltd. Khanewal Road, Multan-Pakistan.

1.3 Contact Numbers:

Tel.: +92-61-9220022

Fax: +92-61-9220021

2. COMPOSITION / COMPONENT INFORMATION:

2.1 General Characteristics of the Chemical Substances:

Components	Weight %
Total Nitrogen	26.0 ± 0.5 %
Moisture	< 0.5 %
Calcium Oxide	9% (minimum)
Product may contain following metals in traces:	
Arsenic	max 20.0 ppm
Cadmium	max 7.0 ppm

Substance/mixture :	Mixture
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Product / ingredient name	CAS number	%
Nitric acid ammonium salt (1:1)	CAS: 6484-52-2	>=70 - <80

Any concentration shown as a range is to protect confidentiality or is due to batch variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

3. HAZARDS IDENTIFICATION. POTENTIAL HEALTH EFFECTS:

PCAN is not classed as hazardous material according to EEC Directive 88/379/EEC. The product is a basically harmless product when handled correctly. However the following points should be noted, which relate to ammonium nitrate contents.

- Emergency** - Not Established
- Precautions** - Avoid breathing dust
- Avoid ingestion

Overexposure Conditions	<ul style="list-style-type: none"> - Avoid Contact with eyes - use by adequate ventilation
Inhalation	<ul style="list-style-type: none"> - Acute: unknown - Chronic: No adverse effects are known.
Skin Contact	<ul style="list-style-type: none"> - High Dust concentrations of airborne material may cause irritation of nose and upper respiratory tract with symptoms such as sore throat and coughing.
Eye Contact	<ul style="list-style-type: none"> - Prolonged contact may cause skin irritation
Ingestion	<ul style="list-style-type: none"> - may cause Eyes irritation following contact - Small quantities are unlikely to cause toxic effect. Large quantities may give rise to gastro-intestinal disorders and in extreme cases (particularly in very young) formation of methanemoglobin (Blue Baby syndrome) and cyanosis (indicated by blueness around the mouth) may occur.
Fire & Thermal Decomposition Products	<ul style="list-style-type: none"> - Inhalation of decomposition gases containing oxides of nitrogen and ammonia can cause irritation and corrosive effects on the respiratory system. Some lung effect may be delayed.

4. FIRST AID:

PCAN is solid product and product of low toxicity.

Inhalation	<ul style="list-style-type: none"> - Move the affected person to fresh air and provide oxygen if breathing is difficult. Treat symptomatically. - Get medical Assistance promptly.
Skin Contact	<ul style="list-style-type: none"> - Wash the affected area with soap and water. If irritation persists obtain medical advice.
Eye Contact	<ul style="list-style-type: none"> - Flush with plenty of water at least for 15 min. if it is necessary seek medical Assistance
Ingestion	<ul style="list-style-type: none"> - Give large quantities of water or Milk to the patient if conscious. Do not induce vomiting and seek for medical assistance. - Do not leave the affected person alone.
Additional Medical Treatment	<ul style="list-style-type: none"> - SYMPTOMATIC treatment and supportive therapy as indicated, if it is necessary.
Specific First Aid	<ul style="list-style-type: none"> - Availability of Flushing water and soap.
Equipment at Workplace	
Fire & Decomposition Products	<p>Skin Contact</p> <ul style="list-style-type: none"> - Wash areas in contact with molten material copiously with cold water - Obtain Medical attention. <p>Inhalation</p> <ul style="list-style-type: none"> - Remove from the source of exposure to fumes. - Keep warm and at rest even though no symptoms may be evident. - Give oxygen, especially if there is blueness around the mouth. - Artificial respiration should only be applied if breathing fails. - Following exposure, the person should be kept under medical review for at least 48 hours as delayed pulmonary Edema may develop.

5. FIRE-FIGHTING MEASURES:

Appropriate Fire Fighting Resources	The product is not directly involved in the fire, but in event of fire all standard fire-fighting resources may be used.
Inappropriate Fire Fighting Resources	No data available.
Special Fire Fighting protection	<p>Personnel must be equipped with appropriate protective clothing and respiratory protection.</p> <ul style="list-style-type: none"> - Call the fire brigade

- Avoid breathing the fumes (toxic). Stand up-wind of the Fire.
- Use a self-contained breathing apparatus if fumes are being entered.
- Use plenty of water
- Do not use chemical extinguishers or foams or attempt to smother the fire with steam or sand.
- Open doors and windows of the store to give maximum ventilation.
- Do not allow molten fertilizer to run into drains,
- Prevent contamination of the fertilizer by oils or other combustible materials.

6. ACCIDENTAL RELEASE MEASURES:

- | | |
|------------------------------------|--|
| Personal Protection | - Use dust masks, protective clothing, goggles, etc. |
| Environmental Protection | - Do not allow to enter sewage, surface or ground water. Do not contaminate with potable water. It can stimulate the process of algae growth. |
| Spillage Cleaning Procedure | - Any spillage of the fertilizer should be cleaned up promptly , Swept up and placed in clean, labeled, open container for safe disposal. Do not allow to mix with combustible or organic substances.
- Depending on the degree and nature of contamination, dispose of by use on farm as a fertilizer by spreading or to an authorized waste facility.
- Take care to avoid the contamination of watercourses and drains. |

7.HANDLING AND STORAGE:

Handling

Use:

- Dust protective Masks;
- Protective gloves;
- Safety goggles

Avoid:

- Storage near food stuff.
- Excessive generation of dust
- Contamination of the fertilizer by combustible (e.g diesel oil, grease) and incompatible materials.
- Unnecessary exposure to the atmosphere to prevent moisture pick-up

Storage

- Locate away from source of heat or fire.
- Keep away from combustible materials and substances mentioned.
- On farm, ensure that the fertilizer is not stored near hay, straw, grain, diesel oil etc.
- Ensure high standard of housekeeping in the storage area.
- Do not permit smoking and the use of naked lights in the storage areas.
- Restrict stack size (according to local regulations) and keep at least 1m distance between stacks of bagged products.
- Any building used for the storage should be dry and well ventilated.
- The product should not be stored in direct sunlight to avoid physical breakdown due to thermal cycling.

8.EXPOSURE CONTROL AND PERSONAL PROTECTION:

8.1 Exposure Control:

Avoid skin and eye contact an inhalation of dust. Wear safety glasses. Respiratory protection is required if airborne concentration is high or unknown. Dust mask should be worn in dust

environment. Always wash hands before smoking, eating, drinking or using the toilet facilities. Use proper ventilation. Take a shower after work by using plenty of soap and water.

- 8.1.1 **Respiratory protection:** use a dust protective mask
- 8.1.2 **Hand Protection:** protective Gloves
- 8.1.3 **Eye/Face Protection:** Safety Goggles and / or Full face shield
- 8.1.4 **Skin and body protection:** protective clothing
- 8.1.5 **Occupational exposure Limits:** No specific official limits. ACG₃IH recommended value (1995-1996) for inhalable particulate. TLV/TWA 10 mg/m³
- 8.1.6 **Control by impact of substance (product on the environment);**
If large quantity of spilled material penetrates the soil; sewage, surface or ground water this will increase the ammonium nitrate contents. The fertilizers norms must be observed.

9. PHYSICAL AND CHEMICAL PROPERTIES:

9.1 General Information:

- Appearance / Colour: Prilled Material / White, Off white
- Physical Condition: Solid (can cause combustion)
- Odour: Odourless

9.2 Physical and chemical Information:

- pH: 7.0 ~ 7.5 (for 10% water solution)
- Flash Point: no data available
- Melting Point: 160 °C
- Bulk Density: 900~1000 kg/m³
- Water Solubility: Ammonium Nitrate highly soluble, CaCO₃ Sparingly Soluble, Product Hygroscopic

10. STABILITY AND REACTIVITY:

- Stability**
- Stable under normal storage and handling conditions and use.
- Conditions to Avoid**
- Storage in warm place or in sunlight
 - Heating above 170°C (decomposes to gases)
 - Contamination by incompatible materials
 - Unnecessary exposure to the atmosphere
 - Closeness to sources of heat or fire
 - Welding or hot work on equipment or plant which may have contained fertilizers without first washing thoroughly to remove all fertilizers.
- Materials to Avoid**
- Combustible materials, reducing agents, acids, alkalis, chlorides, chromates, nitrites, permanganates, metallic powders and substances containing metals such as copper, nickel, cobalt, zinc and their alloys

11. TOXICOLOGICAL INFORMATION:

- General** See Section 3.0
- Toxicity Data** LD50 (Oral, Rat) >2000 mg/Kg may cause methaemoglobinaemia

12. ECOLOGICAL INFORMATION:

- Ecotoxicity**
- Low toxicity to aquatic life. TLM 96 between 10-1000 ppm.
 - Soil organisms: No data available

- Plants and terrestrial animals: No data available

Other harmful effects:

- Depletion of ozone layer: No
- Creating of photochemical potential of ozone layer: No
- Possibility of global warming: No
- Ammonium nitrate is very soluble in water. The NO₃ ion is mobile. The NH₄ ion is adsorbed by soil.
- Limestone is regarded as insoluble in water. They occur naturally. Do not allow to penetrate sewage, surface or ground water.
- Do not contaminate with drinking water.

Mobility

Persistence & Degradability

The nitrate ion is the predominant form of plant nutrition. It follows the natural nitrification / denitrification cycle to give nitrogen.

- Biotic and abiotic degradability: No data available
- Aerobic and anaerobic degradability: No data available

13.DISPOSAL CONSIDERATIONS:

General

- Depending on degree and nature of contamination, dispose of by use as fertilizer on farm or to an authorized waste facility.

14.Transport Information:

Regulation: UN Class	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information Environmental hazards : No.	

Regulation: IMDG	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	
14.6 Additional information	

Regulation: IATA	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	
14.6 Additional information	

Regulation: DOT Classification	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No
14.6 Additional information Environmental hazards : No.	

Regulation: TDG Class	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No
14.6 Additional information Environmental hazards : No.	

Special precautions for user

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

IMSBC

Bulk cargo shipping name :

AMMONIUM NITRATE BASED FERTILIZER (nonhazardous)

Class :

Not applicable.

Group :

C

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION:

15.1 EEC Directives:- Directive 76/116/EEC (Law relating to fertilizers).

16. OTHER INFORMATION:

The buyer takes all risks, related to the use of this product (material).

All safety regulations must be observed.

The seller is not responsible for any damages or injuries caused by the use of the product even by observing all safety regulations.

16.1 Acronyms & References used in preparation of MSDS:

ACGIH:	American Conference of Governmental Industrial Hygienists
CAS#	CAS Registration Number is an assigned number to identify a material. CAS stands for Chemical Abstracts Service.
NIOSH:	National Institute for occupational Safety and health
NFPA:	National Fire Protection Association
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
PEL:	Permissible Exposure Limit (OSHA)
REL:	Recommended Exposure Limit (OSHA)
TLV:	Threshold Limit Values (ACGIH)
TWA:	Time Weighted Average

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