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# FERTILIZER CHEMICALS

# BROCHURE

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# About Us

Tradeasia International Pte. Ltd. is a privately owned, independent company headquartered in Singapore. We are a global trading organization providing integrated chemical procurement services with certainty and trust, which makes Tradeasia unique.



Tradeasia International was setup with the sole intention of carrying out chemical distribution services especially to commodity industries in many parts of the world. Today, Tradeasia International represents a growing number of businesses that are serving a variety of markets. We source and supply about 500-600 containers monthly to our customers worldwide.

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**Locations**

50+

**Suppliers**

500+

**Products**

400+

**Clients**

# Urea

Urea, also called carbamide, appears as white granules and has a chemical formula of  $\text{CO}(\text{NH}_2)_2$ . It is highly soluble in water and produces a neutral solution when dissolved. It is widely used the agricultural and chemical industry as fertilizers and raw materials respectively. In the industrial scale, urea is produced from synthetic ammonia and carbon dioxide. The process consists of two main reactions: the first reaction leads to carbamate formation and the second reaction is the urea conversion.

HS Code : 3102.10.00  
CAS No. : 57-13-6  
Origin : China  
Packaging : 400 @50kg PP bag,  
20 MT/20' FCL



## Specifications:

Property	Unit	Value
Appearance		White granules
Purity	%	46
Biuret	%	1 (max)
Moisture	%	0.5 (max)
Size (0.85 - 2.80mm)	%	90 (min)

## Applications :



### Agricultural Industry

It is widely used in the agricultural industry as fertilizers due to it having the highest nitrogen content among all solid fertilizers. It is also used as a component of animal feed to promote growth in farm animals.



### Chemical Industry

It is used as raw materials for the production of chemicals used in marine plywood such as urea-formaldehyde resins and urea-melamine-formaldehyde.



### Other Applications

Urea is used to manufacture urea nitrate for applications such as explosives. It is also used in cosmetic products such as moisturizers, hair conditioners, skin creams etc. Furthermore, it is also to reduce the emission of NOx pollutants in vehicle exhaust systems.



# Ammonium Nitrate

Ammonium nitrate ( $\text{NH}_4\text{NO}_3$ ) is a colorless rhombic or monoclinic crystal at room temperature. It can be decomposed into water and nitrous oxide at 210 °C. Upon severe heating at 300 °C above, it undergoes decomposition to form nitrogen, oxygen and water. It is soluble in water, methanol and ethanol.

HS Code	: 310223000
CAS No.	: 6484-52-2
Origin	: China
Packaging	: • 25kg/bag, • 50kg/bag, • 50kg drum or jumbo bag

## Specifications:

Property	Unit	Value
Appearance		White solid
Purity	%	99.0
Density at 20 °C	g/cm <sup>3</sup>	1.72
Melting Point	°C	169
Boiling Point	°C	210
Solubility in Water (20 °C)		190g/100ml
Storage Condition	°C	25

## Applications :



### Chemical Industry

- pH Buffering Agent
- Oxidizing/reducing agents



### Agricultural Industry

- Ammonium nitrate is used as fertilizers.
- Lawn and garden care products



### Other Applications

- Making nitrous oxide (laughing gas)
- Photographic supplies, film, and photo chemicals
- Plating agents and surface treating agents
- Explosives

# Calcium Ammonium Nitrate

Calcium Ammonium Nitrate (CAN) – A nitrogenous fertilizer derived from ammonium nitrate which contains a minimum of 20% calcium material (e.g., calcite or dolomite) and a maximum of 27% nitrogen. The material can be substituted with calcium sulphate (gypsum). It is a source of water-soluble nitrogen but not a source of water-soluble calcium.

HS Code : 3102.60.00  
CAS No. : 15245-12-2  
Origin : China  
Packaging : 25kg bag

## Specifications:

Property	Unit	Value
Appearance		White granules
Purity	%	99.0 (min)
Total Nitrogen	%	27 (max)
Calcium Carbonate	%	20 (min)
Iron (Fe)	%	0.005 (max)
Chloride (Cl)	%	0.02 (max)
Phosphate (PO <sub>4</sub> )	%	0.05 (max)
Moisture	%	1.0 (max)
pH		5 - 7

## Applications :



**Agricultural Industry**

Most calcium ammonium nitrate is used as a fertilizer. Fertilizer grade CAN contains roughly 8% calcium and 21-27% nitrogen. It is preferred for use on acid soils, as it acidifies soil less than many common nitrogen fertilizers. The application could be as stand-alone product or more commonly in blends with varying combinations of N, K and micronutrients, typically in specialty crops. The simplest way is broadcast (surface-applied).



**Other Applications**

Calcium ammonium nitrate has been used in improvised explosives. The CAN is not used directly, but is instead first converted to ammonium nitrate.



# Ammonium Sulphate

Ammonium sulphate is an inorganic salt with the chemical formula  $(\text{NH}_4)_2\text{SO}_4$ . Ammonium sulphate should be handled very carefully as it can be highly hazardous to humans. Its primary use is as a fertilizer for agriculture as it contains 21% nitrogen and 24% sulphur. Ammonium sulphate occurs in nature in the form of a mineral called mascagnite, a rare mineral presents in volcanic fumaroles and coal fire dumps.

HS Code : 3102.21.00  
CAS No. : 7783-20-2  
Origin : China  
Packaging : 1000 @25kg bag,  
25 MT/20 'FCL

## Specifications:

Property	Unit	Value
Appearance		White crystals
Nitrogen Content	%	$\geq 21$
Free Acid Content	%	$< 0.05$
Residue as $\text{SO}_4$	%	$< 0.02$
Manganese Content	%	$< 0.00005$
Iron Content	%	$< 0.005$
Heavy Metals Content	%	$< 0.005$
Moisture Content	%	$< 0.10$

## Applications :



### Agricultural Industry

Ammonium sulphate is used as a fertilizer for crops grown on alkaline soil. When ammonium sulphate is added to an alkaline soil, ammonium ions are released along with small amount of acid which lower the pH of the soil. Apart from this, it also acts as a nitrogen source for plant growth.



### Horticulture Industry

Ammonium sulphate is used in horticulture as a spray adjuvant for water soluble insecticides, herbicides and fungicides. Its function is to bind the iron and calcium cations that are present in the water.



### Analytical Uses

Ammonium sulphate is used for purifying proteins by selective precipitation or salting out the protein from the solution, thus providing a simple way of fractionating complex protein mixtures.



### Other Applications

In food industry, it is used as an acidity regulator in flours and breads, and the food grade ammonium sulphate is recognised as safe by the US FDA and the European Union. Ammonium sulphate is listed as an ingredient for many US vaccines by the Centre for Disease Control.

# Monoammonium Phosphate



Mono ammonium phosphate (MAP) is formed with a solution of Phosphoric acid and Ammonia solution. Mono ammonium phosphate, also known as Ammonium dihydrogen phosphate, is widely used in food and fertilizer industries. MAP has a tetragonal crystal prism structure. As a result of its crystal structure, Ammonium Dihydrogen phosphate is widely used in optical industry. MAP usually contains  $P_2O_5$  (52%) and ammoniacal nitrogen (11%).

HS Code	: 3105.20.00
CAS No.	: 7722-76-1
Origin	: China
Packaging	: Kraft paper bags/plastic woven bags with PE liner. Net weight 25kg/bag

## Specifications:

Property	Unit	Value
Appearance		White crystals
Purity	w %	≥98.5
$P_2O_5$	w %	≥60.8
Nitrogen	w %	≥11.8
Arsenic	w %	≤0.005
Fluoride	w %	≤0.02
Sulfate	w %	≤0.9

## Applications :



### Food Industry

MAP is mainly used as food additive, fermentation agent and nourishment. It is widely used as a leavening agent in food production. As a leavening agent, it promotes fermentation and enhance nutrition in baked food.



### Agricultural Industry

MAP is widely used in making effective organic complex fertilizer, compound fertilizer and bulk blending fertilizer. Mono ammonium phosphate is required to sustain healthy plant growth.

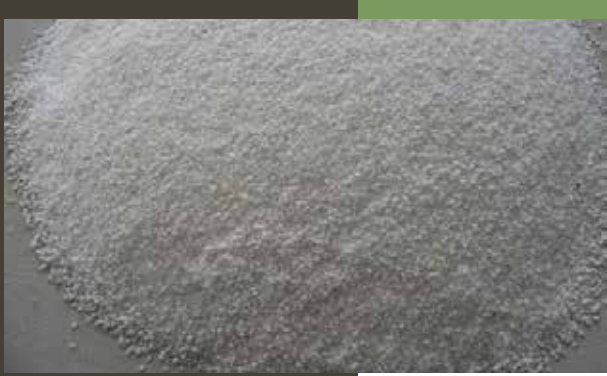


### Other Applications

Mono ammonium phosphate is used in ceramics, enamels, various fireproofing applications, dry fire extinguisher powders and fermentation processes.

# Diammonium Phosphate

Diammonium Phosphate (DAP) is a water-soluble ammonium salt that is one of the most widely used phosphorus fertilizer because of its relatively high nutrient content. It is manufactured by reacting phosphoric acid with ammonia in a controlled reaction, where the hot slurry is then cooled, granulated, and sieved. It contains two ammonia molecules and one of the ammonia molecules will revert to ammonia in alkaline condition which will make it an excellent fit for low PH soil.



HS Code : 3105.30.00  
CAS No. : 7783-28-0  
Origin : China  
Packaging : 25 kg/bag

## Specifications:

Property	Unit	Value
Appearance		White powder
Purity	%	98.0
Density at 20 °C	g/cm <sup>3</sup>	1.619
Melting Point	°C	Decomposes
Boiling Point	°C	Not Available
Solubility in Water		58g / 100ml (10 °C)
Storage Condition	°C	25

## Applications :



### Agricultural Industry

Used as fertilizers for crops such as fruits, rice, vegetables, etc and feed additives.



### Food Industry

Used as food leavening agent, dough regulator, yeast food, brewing fermentation additives as well as being used as a buffer



### Other Applications

- Used as analysis reagents and buffer
- Used for printing plate, medicine, fire prevention, electronic tubes.
- Fire retardant





# Single Super Phosphate

Single Super Phosphate (SSP) contains 16% of Citrate soluble available  $P_2O_5$ , 14.5% Water soluble available  $P_2O_5$ , 11% of Sulphur, and essential micronutrients in small proportions. The ratio of phosphorus and sulphur suits many crop and pasture needs. Both the phosphorus and sulphur are in readily available forms. SSP is also known as ordinary superphosphate and normal superphosphate. It's sometimes confused with triple superphosphate (TSP) production, which results from reacting rock phosphate with phosphoric acid

HS Code	: 3103.10.00
CAS No.	: 8011-76-5
Origin	: China
Packaging	: 50kg bag or as per customer's request

## Specifications:

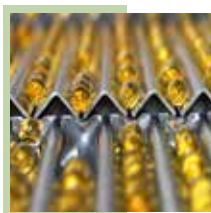
Property	Unit	Value
Appearance		Grey granules
Purity	%	90 (min)
$P_2O_5$ Content	%	18 - 20
Phosphorus	%	7 - 9
Calcium	%	18 - 21
Sulphur	%	11 - 12
Moisture	%	2.0 (max)
pH		<2

## Applications :



**Agricultural Industry**

SSP is a traditional product for supplying phosphorus and sulphur to pastures, the main two nutrients required for pasture production. Generally mixed with Sulphate of Ammonia and Muriate of Potash, but can be blended with other fertilisers.



**Other Applications**

Monocalcium phosphate and gypsum (the two primary ingredients in SSP) appear in many products. MCP is commonly added to enrich animal feed, and bakers routinely use it as a leavening agent. Gypsum is widely used in the construction industry, as well as in the food and pharmaceuticals world.

# Triple Super Phosphate

Triple superphosphate (TSP) was one of the first high-analysis phosphorus (P) fertilizer known as calcium dihydrogen phosphate and as monocalcium phosphate,  $[\text{Ca}(\text{H}_2\text{PO}_4)_2 \cdot \text{H}_2\text{O}]$ . Triple superphosphate (TSP) is the more concentrated fertilizer than ordinary superphosphate, containing from 44 to 51% of available  $\text{P}_2\text{O}_5$  or nearly three times the amount in the regular superphosphate.



HS Code	: 3103.10.00
CAS No.	: 7758-23-8
Origin	: China
Packaging	: As per customer's request

## Specifications:

Property	Unit	Value
Appearance		Grey to black powder
Purity	%	$\geq 90$
Odor		-
Melting Point	K	-
Boiling Point	K	-
Solubility		90% of TSP is soluble in water
Density	$\text{g/cm}^3$	-

## Applications :



### Agricultural Industry

TSP has several agronomic advantages that made it such a popular P source for many years. It has the highest P content of dry fertilizers that don't contain nitrogen (N). Over 90 percent of the total P in TSP is water soluble, so it becomes rapidly available for plant uptake.



### Other Applications

Monocalcium phosphate is an important ingredient in baking powder. The acidic monocalcium phosphate reacts with an alkaline component to produce carbon dioxide, the leavening for many baked products. Monocalcium phosphate is commonly added to animal diets as an important mineral supplement of both P and Ca.

# Potassium Chloride



Potassium chloride (KCl) is a metal halide salt composed of potassium and chlorine. In its pure state, it is odourless and has a white or colourless vitreous crystal appearance, with a crystal structure that cleaves easily in three directions. Potassium chloride crystals are face-centered cubic (FCC). Potassium chloride was historically known as "muriate of potash".

HS Code : 3104.20.00  
CAS No. : 7447-40-7  
Origin : China  
Packaging : 840 @25kg PP/PE bags,  
21 MT/20 'FCL

## Specifications:

Property	Unit	Value
Appearance		White crystals
Purity	%	97
Odor		Odorless
Acidity		7
Melting Point	°C	770
Moisture	%	0.5 - 1.0
Solubility	%	95.0

## Applications :



### Food Industry

Used as a food additive that acts as a stabilizer and thickener in many food products such as dairy food and dairy food alternatives products.



### Agricultural Industry

Used for making fertilizer, since the growth of many plants is limited by their potassium intake. As a chemical feedstock, it is used for the manufacture of potassium hydroxide and potassium metal.



### Other Applications

Used in medicine to treat or prevent low amounts of Potassium in the blood, lethal injections, scientific applications, and as a sodium-free substitute for table salt (sodium chloride).

# Potassium Sulphate



Potassium sulfate ( $K_2SO_4$ ) (in British English potassium sulphate, also called sulphate of potash, arcanite, or archaically known as potash of sulfur) is a non-flammable white crystalline salt which is soluble in water. The chemical is commonly used in fertilizers, providing both potassium and sulfur.

HS Code	: 3104.30.00
CAS No.	: 7778-80-5
Origin	: Indonesia
Packaging	: • 1000 @25kg PP/PE bag, 25 MT/20' FCL • 1000 @25kg PP woven bag, 25 MT/20' FCL

## Specifications:

Property	Unit	Value
Appearance		White powder or granular
Purity	%	99
Odor		Odorless
Melting Point	K	1342
Boiling Point	K	1962
Solubility		Slightly soluble in glycerol Insoluble in acetone, alcohol
Density	g/cm <sup>3</sup>	2.66

## Applications :



**Agricultural Industry**

The principal use of potassium sulfate is as a fertilizer.  $K_2SO_4$  does not contain chloride, which can be harmful to some crops. Potassium sulfate is preferred for these crops, which include tobacco and some fruits and vegetables.



**Other Applications**

Potassium sulfate is also used as a flash reducer in artillery propellant charges. It reduces muzzle flash, flareback and blast overpressure.





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