



PSDS GROUP 5 PRODUCT  
AIC PRODUCT SAFETY DATA SHEET - GROUP 5

## INTRODUCTION

This Product Safety Data Sheet applies exclusively to products manufactured or marketed by members of the Agricultural Industries Confederation. It does not apply to any other product of similar name or nature. The products covered will be clearly identified by the name of the marketer and/or manufacturer on the associated labels and/or documents. Qualifying product will be marked as follows:



## 1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

### 1.1 Identification of the Product

Products in Group 5 are solid compound fertilisers (NPK, NP, NK) with not more than 70% ammonium nitrate which are capable of self sustaining decomposition ("cigar-burning").

### 1.2 Company

See details below

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

These products may contain some or all of the following ingredients in addition to the ammonium nitrate. Ammonium sulphate, mono and di-ammonium phosphate, normal (single) superphosphate, triple superphosphate, phosphate rock, potassium chloride (muriate of potash), potassium sulphate, calcium nitrate, inert fillers such as sand or limestone, and coating materials, such as oil, amine, clay or talc., secondary nutrients and/or micro-nutrients.

## 3. HAZARDS IDENTIFICATION

### 3.1 Human Health

Products are of a low toxicity but prolonged skin or eye contact may cause some irritation.

*Ingestion:* Small quantities are unlikely to cause toxic effects.

Large quantities may give rise to gastro-intestinal disorders and in extreme cases (particularly in children) formation of methaemoglobin ("blue baby" syndrome) and cyanosis (indicated by blueness around the mouth) may occur. No adverse long term effects are known.

*Inhalation:* Low toxicity dust but high concentration of air-borne material may cause irritation of the nose and upper respiratory tract with symptoms such as sore throat and coughing. Generally regarded as a nuisance dust with no specific official Occupational Exposure Limit (OEL). Recommend a total inhalable dust standard for nuisance dust of 10 mg/m<sup>3</sup> as an 8 hour Time Weighted Average. See HSE Guidance Notes EH 40 and HSG 173.

*Molten material:* Will cause burns and inhalation of decomposition gases (eg in a fire) may cause serious delayed lung effects.

### 3.2 Environment

As this fertiliser contains nitrate and phosphate, heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters or nitrate contamination. See Section 12.

## 4. FIRST AID MEASURES

### Product

*Skin contact:* wash the affected area with soap and water

*Eye contact:* irrigate eyes with copious amounts of eyewash solution or water for at least 10 minutes. Obtain medical advice if symptoms persist.

*Ingestion:* **do not** induce vomiting. Give milk or water to drink. Obtain medical attention if more than small quantities have been swallowed.

*Inhalation:* remove from source of exposure to dust. Keep warm and at rest. Obtain medical advice if symptoms persist.

### Fire and Thermal Decomposition Products

*Skin contact:* wash areas in contact with molten material. Wash copiously with cold water. Seek medical advice.

*Inhalation:* remove from source of exposure to fumes. Keep warm and at rest.

## 5. FIRE-FIGHTING MEASURES

When the fertiliser **is not** directly involved in the fire use the best means available to control the fire.

When the fertiliser **is** involved:-

1. Avoid breathing the fumes. Wherever possible wear an approved breathing mask when fighting a fire or when fumes are being emitted.
2. Call the fire brigade.
3. Use plenty of water.
4. Open doors and windows to give maximum ventilation.
5. **Do not** use chemical extinguishers or foams or attempt to smother the fire with steam or sand.
6. **Do not** allow molten fertiliser to run into drains.

If safe to do so prevent the contamination of the fertiliser by oil and other combustible materials. If water containing the fertiliser enters any drain or water course, inform the appropriate water authorities immediately.

Note also first aid precautions (4).

## 6. ACCIDENTAL RELEASE MEASURES

Clean up spillage promptly. Sweep up and place in a clean

appropriately labelled container. Do not allow to mix with sawdust and other combustible or organic substances.

## 7. HANDLING AND STORAGE

**7.1 Handling:** Avoid excessive generation of dust. Avoid contamination by materials such as diesel oil, grease and other combustible materials. Avoid unnecessary exposure to the atmosphere to prevent moisture pick-up.

**7.2 Storage:** The basic requirements are the avoidance of involvement in a fire and contamination. Locate away from sources of heat, fire or explosion. Keep away from combustible materials and chemical substances taking particular care on farms to ensure that it is not stored near hay, grain, diesel, etc. Ensure high standard of house-keeping in the storage areas. **Do not** permit smoking or the use of naked lights in the storage area. Buildings used for storage should be dry and well ventilated, stacks therein should be at least 1 metre from walls, eaves and beams. Further storage guidance is given in HSE Guidance IND(G)230L.

## 8. EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1 Occupational exposure limits

No specific official limits

ACGIH recommended value (1995-1996) for inhalable particulate: TLV/TWA 10mg/m<sup>3</sup>.

### 8.2 Precautionary and engineering measures

Avoid high dust concentration and provide ventilation where necessary.

### 8.3 Personal Protection

Wear suitable gloves when handling the product over long periods. Use suitable dust respirator if dust concentration is high.

After handling product, wash hands and observe good hygiene practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White grey or brown granules or prills unless deliberately coloured during manufacture.
Odour	Odourless.
pH water solution (100g/l)	Usually > 4.5.
Melting point	Depends on composition. May decompose before melting 160-170°C depending on moisture content
Boiling point	> 210°C (decomposes).
Explosive properties	Not explosive as per EEC test A14 (67/548/EEC). The fertilizer has a high resistance to detonation. This resistance is decreased by the presence of contaminants and/or high temperatures. Heating under strong confinement (e.g. in tubes or drains) may lead to a violent reaction or explosion especially if there is contamination by some of the substances mentioned under Section 10.3.
Bulk density	Normally between 900 – 1100 kg/m <sup>3</sup>
Solubility in water	Soluble in water, extent depends on composition. Most formulations are hygroscopic.

## 10. STABILITY AND REACTIVITY

Stable under normal storage and handling conditions. Oxidising agent therefore can enhance the combustion of combustible materials. Capable of self-sustained decomposition, especially when the product is in bulk form. A moderate source of heat such as a

buried light bulb can initiate decomposition which can continue even when the heat source is removed. Liberates ammonia when in contact with alkalis eg Caustic Soda, Soda Ash.

Not itself combustible. Melts and decomposes when heated strongly with molten material starting to form between 160 - 165°C. On decomposition gives off water vapour and toxic fumes which may contain oxides of nitrogen and ammonia. Decomposition is accelerated by a number of substances such as acids; carbonaceous materials; chromates; zinc, copper and their alloys; chlorates and reducing agents.

Has a high resistance to detonation. This resistance is decreased by a number of factors such as the presence of contaminants and/or high temperature. Heating under strong confinement (eg in tubes or drains) may lead to a violent reaction or explosion, especially if there is contamination by substances mentioned above.

**Do not** weld or apply heat to equipment or plant which may have contained the fertiliser without first washing thoroughly to remove all fertiliser.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 General

See Section 3.1.

### 11.2 Toxicity Data

Product toxicity will depend on the composition.

Ammonium nitrate:

LD<sub>50</sub> (oral, rat) > 2000mg/kg

May cause methaemoglobinæmia See Section 3.1.

Monoammonium phosphate:

LD<sub>50</sub> (oral, rat) > 2000mg/kg

Diammonium phosphate:

LD<sub>50</sub> (oral, rat) > 2000mg/kg

Potassium chloride or sulphate:

LD<sub>50</sub> (oral, rat) > 2000mg/kg

Calcium nitrate:

LD<sub>50</sub> (oral, rat) 2100mg/kg

## 12. ECOLOGICAL INFORMATION

### 12.1 Mobility

Very soluble in water. The nitrate ion is mobile. The ammonium ion is adsorbed by soil.

### 12.2 Persistence/Degradability

The nitrate ion mobile; the ammonium ion is adsorbed by soil particles. Phosphates, whether water or citrate soluble, are translocated in the soil over very short distances and are then immobilised. The dissolved potassium ion in the soil solution is adsorbed by clay minerals; where these are absent in light soils part of the potassium may be leached.

### 12.3 Bio-accumulation

The product does not show any bio-accumulation phenomena.

### 12.4 Ecotoxicity

Low toxicity to aquatic life.

## 13. DISPOSAL CONSIDERATIONS

Depending on the degree of contamination, dispose of by use on farm, by spreading thinly on open ground or to an authorised waste facility. Take care to avoid the contamination of watercourses and drains. Inform the appropriate water authority in the event of

accidental watercourse contamination.

#### **14. TRANSPORT INFORMATION**

##### **14.1 UN classification**

Classified as miscellaneous dangerous substances.  
UN No 2071 Class 9.

Avoid transport with other materials where there is undue risk of contamination. Ensure that the transport is clean before loading the product.

#### **15. REGULATORY INFORMATION**

##### **15.1 EC Directives**

76/116/EEC (Relating to fertilisers)

##### **15.2 National Regulations**

The Fertilisers Regulations 1991 and subsequent amendments.

Product Supplied by:

#### **16. OTHER INFORMATION**

This safety data sheet provides health and safety information. The product is to be used in applications consistent with best farming practice. Individuals handling this product should be informed under COSHH of the recommended safety precautions and should have access to this information. The product information in this data sheet is to the best of the AIC's knowledge correct as at the date of publication.

Neither the AIC nor the Manufacturer or Supplier accepts liability for any loss or damage (other than that arising from death or personal injury caused by negligence if proved) resulting from reliance on this information. Further information on individual products covered by this safety data sheet may be obtained from the Supplier or the Company whose name, address and telephone number will be found on the fertiliser container

Data Sheet Compiled by:

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