**PSDS GROUP 9 PRODUCT**
**AIC PRODUCT SAFETY DATA SHEET - GROUP 9**

## 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 9 are fluid straight nitrogen fertilisers in the form of aqueous solutions or suspensions.

### 1.2 Company

See details below

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

These products may contain some or all of the following ingredients:- ammonium nitrate, urea, ammonium sulphate, other ammonium salts, 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 spray 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

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

### 3.2 Environment

Ammonium nitrate is a nitrogen fertilizer. 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 spray. 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.

6. **Do not** allow the fertiliser or water containing the fertiliser to run into drains.

Note also first aid precautions (4).

## 6. ACCIDENTAL RELEASE MEASURES

Wash down spillage promptly and avoid ingestion by livestock Take care to avoid the contamination of watercourses and drains. Inform the appropriate water authority in the event of accidental watercourse contamination

## 7. HANDLING AND STORAGE

*7.1 Handling:* Avoid excessive generation of spry during transport of product. Take special care with absorbent materials such as clothing and insulating material contaminated with the fluid which, when dry, may exhibit incendiary properties.

*7.2 Storage:* Store in vessels fit for the purpose. 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. Tank or storage areas

should be appropriately sited to prevent the contamination of drains or watercourses.

## 8. EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.1 Occupational exposure limits

No specific official limits

### 8.2 Precautionary and engineering measures

Avoid high spray concentration and provide ventilation where necessary.

### 8.3 Personal Protection

Wear suitable gloves when handling the product over long periods. Avoid contamination of absorbent clothing. After handling product, wash hands and observe good hygiene practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance | Aqueous solution (clear) or suspension which will crystallise out at temperatures below zero. |
| Odour | Odourless or slight ammoniacal smell |
| pH | > 4.5. |
| Density | Depends on concentration. Normally between 1200 and 1400kg/$m^3$ |

## 10. STABILITY AND REACTIVITY

Stable under normal storage and handling conditions. Liberates ammonia when in contact with alkalies eg Caustic Soda, Soda Ash.

The solution (and solids in solution) are not combustible; water evaporates and ammonia is given off when strongly heated. After complete evaporation a solid or molten mass may form which decomposes on further heating, giving off toxic fumes containing ammonia and oxides of nitrogen. The dried or molten mass may exhibit oxidising properties.

There is no explosive risk under normal handling situations but in pumping operations, if allowed to run dry, may possibly exhibit explosive properties.

**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

LD50 (oral, rat) > 2000mg/kg
May cause methæmoglobinæmia See Section 3.1.

## 12. ECOLOGICAL INFORMATION

### 12.1 Mobility

The nitrate ion is mobile. The ammonium ion is adsorbed by soil.

### 12.2 Persistence/Degradability

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

### 12.3 Bio-accumulation

The product does not show any bio-accumulation phenomena.

### 12.4 Ecotoxicity

Low toxicity to aquatic life. TLM 96 between 10-100ppm

## 13. DISPOSAL CONSIDERATIONS

Depending on the degree of contamination, dispose of by use on farm, by spraying 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

Not classified i e considered non-hazardous material according to the UN Orange Book and international transport codes e g RID (rail), ADR (road) and IMDG (sea).

## 15. REGULATORY INFORMATION

### 15.1 EC Directives

76/116/EEC (Relating to fertilisers)

### 15.2 National Regulations

The Fertilisers Regulations 1991 and subsequent amendments.

## 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

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Product Supplied by:

Data Sheet Compiled by:

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## INTRODUCTION

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## 1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

### 1.2 Identification of the Product

Products in Group 10 are fluid compound fertilisers (NPK, NP, NK) in the form of aqueous solutions or suspensions.

### 1.2 Company

See details below

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

These products may contain some or all of the following ingredients:- ammonium nitrate, urea, ammonium sulphate, ammonium phosphate, potassium chloride (muriate of potash), potassium phosphate, potassium sulphate, triple superphosphate, inert suspending agents such as bentonite or atapulgite clay, secondary nutrients, micro-nutrients and complexing agents.

## 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.

*Inhalation:* Low toxicity spray 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

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

### 3.2 Environment

Heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters or nitrate contamination. See Section 12.

## 6. 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 spray. 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.

**7. 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:-

2. 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.

6. **Do not** allow the fertiliser or water containing the fertiliser to run into drains.

Note also first aid precautions (4).

**7. ACCIDENTAL RELEASE MEASURES**

Wash down spillage promptly and avoid ingestion by livestock Take care to avoid the contamination of watercourses and drains. Inform the appropriate water authority in the event of accidental watercourse contamination

**7. HANDLING AND STORAGE**

*7.1 Handling:* Avoid excessive generation of spry during transport of product. Take special care with absorbent materials such as clothing and insulating material contaminated with the fluid which, when dry, may exhibit incendiary properties.

*7.3 Storage:* Store in vessels fit for the purpose. 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. Tank or storage areas should be appropriately sited to prevent the contamination of drains or watercourses.

## 9. EXPOSURE CONTROL/PERSONAL PROTECTION

### 8.4 Occupational exposure limits

No specific official limits

### 8.5 Precautionary and engineering measures

Avoid high spray concentration and provide ventilation where necessary.

### 8.6 Personal Protection

Wear suitable gloves when handling the product over long periods. Avoid contamination of absorbent clothing. After handling product, wash hands and observe good hygiene practice.

## 11. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance | Aqueous solution (clear) or suspension which will crystallise out at temperatures below zero. |
| Odour | Odourless or slight ammoniacal smell |
| pH | > 4.5. |
| Density | Depends on concentration. Normally between 1200 and 1400kg/$m^3$ |

## 12. STABILITY AND REACTIVITY

Stable under normal storage and handling conditions. Liberates ammonia when in contact with alkalies eg Caustic Soda, Soda Ash.

The solution (and solids in solution) do not support combustion and may act as a fire retardant. When strongly heated water evaporates and ammonia is given off. After complete evaporation a solid or molten mass may form which decomposes on further heating, giving off toxic fumes containing ammonia, hydrogen chloride, ammonium chloride and chlorine and oxides of nitrogen if ammonium nitrate is present.

There is no explosive risk under normal handling situations but in pumping operations, if allowed to run dry, may possibly exhibit explosive properties.

**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.

### 11.3 Toxicity Data

Product toxicity will depend on the composition.

Ammonium nitrate:
LD50 (oral, rat) > 2000mg/kg
May cause methæmoglobinæmia

Ammonium phosphate
LD50 (oral, rat) > 2000mg/kg

Potassium chloride or sulphate:
LD50 (oral, rat) > 2000mg/kg
See Section 3.1.

## 12. ECOLOGICAL INFORMATION

### 12.3 Mobility

The nitrate ion is mobile. The ammonium ion is adsorbed by soil.

### 12.4 Persistence/Degradability

The nitrate ion is 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 spraying 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.

## 17. TRANSPORT INFORMATION

### 14.1 UN classification

Not classified i e considered non-hazardous material according to the UN Orange Book and international transport codes e g RID (rail), ADR (road) and IMDG (sea).

## 18. REGULATORY INFORMATION

### 18.1 EC Directives

76/116/EEC (Relating to fertilisers)

### 15.2 National Regulations

The Fertilisers Regulations 1991 and subsequent amendments.

## 19. 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.

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