AIC MODEL SAFETY DATA SHEET
SAFETY DATA SHEET FERTILISER GROUP 10

INTRODUCTION

This 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:

SDS FERTILISER GROUP 10

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

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

1.1 Identification of the Product

The company should state the trade name(s).

1.2 Use

As a fertiliser.

1.3 Company

Provide the company's name, address, telephone number and e-mail address of the competent person responsible for the Safety Data Sheet.

1.4 Emergency Telephone

State the emergency telephone number and specify if the number is available only during office hours.

2. HAZARDS IDENTIFICATION

2.1 Regulatory Classification

These fertiliser preparations are not classified as dangerous materials according to EC Directive 67/548/EEC or 1999/45/EC.

2.2 Physicochemical hazards

These fertilisers are aqueous solutions or suspensions of salts; they are not flammable.

2.3 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 mist; 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

2.4 Environment

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

2.5 Other Hazards

On heating it can evaporate and decompose, releasing toxic fumes containing nitrogen oxides, ammonia and oxides of sulphur depending on the constituents. Under conditions of high temperature, confinement and/or contamination, a violent reaction can take place, possibly leading to explosion.

3. COMPOSITION/INFORMATION ON INGREDIENTS

These products may contain some or all of the following ingredients in an aqueous solution or suspension:- *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.*

Example:
Main Ingredient: *Ammonium Nitrate (AN) and/or urea.*
Chemical name: *Ammonium nitrate* ***Formula:*** $NH_4\ NO_3$

EINECS: *229-347-8* ***CAS:*** *6484-52-2*
Chemical name: *Urea* ***Formula:*** N_2H_4CO
EINECS: *200-315-5* ***CAS:*** *57-13-6*

4. FIRST AID MEASURES

4.1 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 develop and persist.

Ingestion: **do not** induce vomiting. Rinse mouth with water. 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.

4.2 Fire and Thermal Decomposition Products

Skin contact: wash copiously with cold water areas in contact with molten material. 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:-

- Evacuate area.
- Avoid breathing the fumes.
- Call the fire brigade.
- Wear an approved self-contained breathing apparatus when fighting fire or fumes are being emitted.
- Fight the fire from upwind and from outside the buildings, if possible.
- Use plenty of water.
- Open doors and windows to give maximum ventilation.
- Where combustible material is the source of the fire, extinguish

this source as a matter of priority.

- **Do not** allow the fertiliser or water containing the fertiliser to run into drains. In case of contamination of water-course, inform the appropriate water authority such as the Environment Agency.

Note also first aid precautions (4).

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions
Avoid prolonged contact. Do not smoke. Avoid inhalation of spray mist. Avoid contact with decomposition products. See also section 8.

6.2 Environmental protection
Wash down spillage promptly and avoid ingestion by livestock Take care to avoid the contamination of watercourses and drains. Inform the appropriate water authority such as the Environment Agency in the event of accidental watercourse contamination.

6.3 Methods for cleaning up
Absorb pooled product into soil and dispose as described in section 13. Note that suspension fertilisers are less free flowing than solutions.

Wash contaminated area with large quantities of water.

6.4 Disposal
See sections 13.

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. 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 and clearly labelled. See Guidance notes from AIC/Environment Agency.

7.3 Packaging Materials
Generally not applicable, as supplied in bulk.

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.

In the presence of thermal decomposition gases, use approved self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	*Aqueous solution (clear) or suspension*
Odour	Odourless or slight ammoniacal smell
pH	> 4.5.
Boiling point	*Depends on concentration, range: XXXX*
Crystallising point	*at temperatures below zero.*
Flash Point	Not relevant
Flammability	Not flammable
Density	*Depends on concentration. Normally between 1200 and 1400kg/m^3*
Solubility in water	Completely .

STABILITY AND REACTIVITY

10.1 Stability
Stable under normal storage and handling conditions.

10.2 Conditions to avoid
The solution and suspension 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.

High temperature, contamination by incompatible/combustible materials, application of heat and confinement e.g. welding or hot work on equipment or plant which may have contained fertiliser without first washing thoroughly to remove all fertiliser.

10.3 Materials to Avoid
Combustible and other organic materials, reducing agents: acids, alkalis, metal powders, zinc, copper and their alloys, carbon, phosphorus, sulphur, copper salts, chlorides, hypochlorites, perchlorates, chromates, nitrites, permanganates.

Liberates ammonia when in contact with alkalies e. g. Caustic Soda, Soda Ash.

10.4 Hazardous decomposition products
Thermally decomposes when heated strongly; the decomposition gases include water vapour and toxic fumes such as oxides of nitrogen and ammonia. Decomposition is accelerated by a number of substances , see 10.3.

11. TOXICOLOGICAL INFORMATION

11.1 Acute Toxicity
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.

Urea
LD50 (oral rat) >2000mg/kg

11.2 Contact: Prolonged contact may cause irritation of the skin and mucous tissues.

11.3 Inhalation: Prolonged exposure to dust may cause irritation When heated gives off toxic gases, see 2.3.

11.4 Ingestion: Small quantities unlikely to cause toxic effect. Large quantities may give rise to gastro-intestinal disorders, inducing headache, nausea, dizziness, vomiting. See 2.3.

11.5 Sensitisation: None reported..

11.6 Chronic or Long-term Effects: None reported..

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Low toxicity to aquatic life.

Ammonium nitrate:
Low toxicity to aquatic life. TLM 96 between 10-100ppm
LC50-48h fish (Cyprinus carpio): 74 – 102 mg/l
IC50 invertebrates (Daphnia magna) = 555 mg/l
IC50 algae (Scenedesmus quadricauda) = 83 mg/l

Other constituents, as appropriate. For example:
Urea:
Urea has low intrinsic aquatic toxicity but will exert a substantial oxygen demand when significant quantities, as in a spillage, reach a watercourse and may cause damage to aquatic life.

Ammonium phosphate

Potassium chloride

12.1 Mobility

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

12.3 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.

12.4 Bio-accumulation

The product does not show any bio-accumulation phenomena.

12.5 Other Data

A high nitrogen and phosphate concentration in confined surface waters may induce proliferation of algae (eutrophication).

13. DISPOSAL CONSIDERATIONS

Depending on the degree of contamination, dispose of by use on farm, by spraying or spreading contaminated soil 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 such as the Environment Agency 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

Regulation 2003/2003/EC relating to fertilisers, OJ 304/1 20.11.2003
76/116/EEC (Relating to fertilisers)

15.2 National Regulations

The Fertilisers Regulations 1991 SI No. 2197 and subsequent amendments.
The EC fertilizers (England and Wales) Regulations 2006, SI No. 2486.
Control of Major Accident Hazards (COMAH) Regulations 1999 and Amendment Regulations 2005.
Notification of Installations Handling Hazardous Substances Regulations (1982), SI No. 1357 and amendment Regulations 2002 (NIHHS).

16. OTHER INFORMATION

Companies should mention in-house or other sources of 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, 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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