



Number Four

1 - IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY

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| Tradename | Number Four |
| Designation | NPK Fertiliser |
| Company address | GrowHow UK Ltd, Ince, Chester CH2 4LB |
| Telephone | +44(0)151 357 2777 |
| Telefax | +44(0)151 357 1755 |
| In case of Emergency telephone | +44(0)151 357 4029 |

2 – COMPOSITION / INFORMATION ON INGREDIENTS

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| CAS Number | None applies - Preparation |
| EINECS Number | None applies - Preparation |
| EINECS Name | None applies - Preparation |
| Molecular Formula | None applies - Preparation |
| Product description | Granular compound fertiliser prepared from raw materials which include ammonium nitrate, ammonium phosphates and potash. Coated with materials which include oil, amine and talc. |
| Form | Grey / white / pink granules. |
| Concentration | 15% w/w total nitrogen w/w present as ammonium nitrate. 15% w/w P ₂ O ₅ present as ammonium phosphates. 20% w/w K ₂ O present as potassium chloride and potassium nitrate. |
| Classification | Not classified as a material hazardous for supply according to EC Directive 1999/45/EC. |

3 – HAZARDS IDENTIFICATION

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| Human Health | Number Four is harmless when handled correctly. However the following points should be noted: |
| Skin contact | Prolonged contact may cause some irritation. |
| Eye Contact | May cause irritation following contact. |
| Ingestion | Small quantities are unlikely to cause toxic effect. Large quantities may give rise to gastrointestinal disorders and in extreme cases (particularly in the very young) formation of methaemoglobin ('blue baby' syndrome) and cyanosis (indicated by blueness around the mouth) may occur. |
| Inhalation | High dust concentrations of air-borne material may cause irritation of the nose and upper respiratory tract with symptoms such as sore throat and coughing. |
| Long Term Effects | No adverse effects are known |
| Fire and Thermal Decomposition Products | Inhalation of decomposition gases can cause irritation and corrosive effects on the respiratory system. Some lung effects may be delayed. |
| Environment | Number Four is a complex NPK fertiliser containing nitrate and phosphate. Heavy spillage may cause adverse environmental impact such as eutrophication in confined surface waters or nitrate contamination of ground or surface water. (See section 12). |
| Other | Number Four is stable under normal storage and handling conditions. It is not itself combustible but it can support the combustion of combustible materials even in the absence of air. Packaged material is marked with the 'oxidizing agent' symbol on the bags. Number Four melts and decomposes if heated strongly. On decomposition it gives off water vapour and toxic gases such as oxides of nitrogen, ammonia, chlorine and hydrogen chloride. Decomposition is accelerated by a number of substances: see Section 10. Heating of Number Four under strong confinement (eg in tubes and drains) may lead to a violent reaction or explosion especially if contaminated by some of the substances mentioned in Section 10. |



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4 - FIRST AID MEASURES

Product

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| Skin contact | Wash the affected area with soap and water |
| Eye contact | Irrigate eyes with copious amounts of water for at least 10 minutes. Obtain medical attention if eye irritation persists. |
| Ingestion | Do not induce vomiting. Give water or milk to drink. Obtain medical attention if more than a small quantity has been swallowed. |
| Inhalation | Remove from source of exposure to dust. Obtain medical attention if adverse effects occur. |

Fire and Decomposition Products

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| Skin contact | Wash areas in contact with molten material copiously with cold water. Obtain medical attention. |
| Inhalation | Remove from 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. Keep under medical review for at least 48 hours as delayed pulmonary oedema may develop. |

5 - FIRE FIGHTING MEASURES

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| If Number Four is not directly involved in the fire: | Use the best available means to extinguish the fire. |
| If Number Four is involved in the fire: | Call the fire brigade. Avoid breathing the fumes (toxic). Stand upwind of the fire. Use a self-contained breathing apparatus if fumes are being entered. Fight the fire with 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 fertiliser to run into drains. Prevent any contamination of Number Four by oils or other combustible materials. Inform the local authorities immediately if water containing fertiliser enters any drains or watercourse. If Number Four stored in bulk is decomposing, use a special self-propelled water lance to penetrate the heap to the seat of the decomposition. |

6 - ACCIDENTAL RELEASE MEASURES

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| Spillages | Any spillage of Number Four should be cleaned up promptly, swept up and placed in a clean labelled container for safe disposal. Do not allow it to mix with sawdust and other combustible or organic substances. Depending on the degree or nature of contamination, dispose of by use as a fertiliser or to an authorised waste facility. Take care to avoid contamination of watercourses and drains and inform the appropriate authority in case of accidental contamination of watercourses. |
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7 - HANDLING & STORAGE

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| Handling | Avoid excessive generation of dust. Avoid contamination by diesel oil, grease and other combustible materials. Avoid unnecessary exposure to the atmosphere to prevent moisture pick-up. Wear gloves when handling Number Four over long periods. |
| Storage | Locate away from sources of heat or fire. Keep away from combustible materials and substances mentioned in Section 10. On farm, ensure that Number Four is not stored near hay, straw, grain, diesel oil etc. Ensure a high standard of housekeeping in the storage area. Do not permit smoking or the use of naked lights in the storage area. Restrict stack size and keep at least one metre distance around the stacks of bagged products. Any building used for storage should be dry and well ventilated. Wherever possible avoid storing Number Four in direct sunlight to minimise the risk of product breakdown due to thermal cycling. |



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8 - EXPOSURE CONTROL / PERSONAL PROTECTION

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| Occupational Exposure Limits | No specific HSE limit. A total inhalable dust standard for nuisance dust of 10 mg/m ³ is recommended as an 8-hour Time Weighted Average. |
| Precautionary/Engineering Measures | Avoid high dust concentration and provide ventilation where necessary. |
| Personal Protection | Wear suitable gloves when handling Number Four over long periods. Use a suitable dust respirator if dust concentration is high. After handling the product wash hands and observe good hygiene practice. |

9 - PHYSICAL AND CHEMICAL PROPERTIES

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| Appearance | Light brown / grey / pink granules |
| Odour | Odourless |
| pH water solution (100 g/litre) | >4.5 |
| Melting point | 160 - 165°C (may decompose before melting) |
| Boiling point | >210°C (decomposes) |
| Explosive properties | Not explosive as per EEC test A14 (67/548/EEC). Number Four has a high resistance to detonation. This resistance is decreased by 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 some of the substances in Section 10.3. |
| Oxidising properties | Can support combustion. Not classed as an oxidising material according to Directive 67/548/EEC and test A17. |
| Bulk density | Approximately 1000 kg/m ³ |
| Solubility in water | Soluble in water. Hygroscopic - readily picks up moisture from the air. |

10 - STABILITY AND REACTIVITY

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| Stability | Number Four is stable under normal conditions of storage, handling and use. |
| Conditions to Avoid | Contamination by incompatible materials. Unnecessary exposure to the atmosphere. Close proximity to sources of heat or fire. Welding or hot work on equipment or plant which may have contained Number Four without first washing thoroughly to remove all fertiliser. |
| Materials to avoid | Combustible materials, reducing agents, acids, alkalis, chlorates, chromates, nitrites, permanganates, metallic powders and substances containing metals such as copper, nickel, cobalt, zinc and their alloys. |
| Hazardous Reactions and Decomposition Products | When strongly heated this product melts and decomposes releasing toxic fumes. Violent reaction or explosion may occur in cases of strong confinement. When in contact with alkaline materials such as lime it may give off ammonia gas. See also sections 3 and 9. |

11 - TOXICOLOGICAL INFORMATION

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| General | Number Four is harmless when handled correctly. When heated it can give off toxic gases. See section 3. |
| Toxicity Data | Ammonium Nitrate LD50 (oral, rat) > 2000 mg/kg. May cause methaemoglobinaemia (see Section 3). Potassium Chloride LD50 (oral, rat) > 2000 mg/kg |



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12 - ECOLOGICAL INFORMATION

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| Mobility | The NO ₃ - ion is mobile. The NH ₄ ⁺ ion is adsorbed by soil particles. The K ⁺ ion in the soil solution is adsorbed by clay minerals and only in light soils where these are absent can part of the potassium be leached. |
| Persistence/Degradability | Nitrogen follows the natural nitrification / denitrification cycle to give nitrogen or nitrogen oxides. Potassium is mainly adsorbed by clay minerals or remains as K ⁺ in the soil solution. |
| Bio-accumulation | Number Four does not show any bio-accumulation phenomena. |
| Eco-toxicity | Low toxicity to aquatic life. |

13 - DISPOSAL CONSIDERATIONS

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| Disposal | Depending on the degree and nature of the contamination dispose of by use as a fertiliser on farm or to an authorised waste facility. |
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14 - TRANSPORT INFORMATION

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| UN classification : | Non-hazardous for transport |
| Transport classification: | Not applicable |

15 - REGULATORY INFORMATION

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| EU Directives & Regulations | 2003/2003/EC (Fertiliser Regulations) 96/82/EC (Control of Major Accident Hazards involving Dangerous Substances) and 2003/105/EC (amendment) |
| UK Legislation | The Fertilisers Regulations 1991 and Amendment Regulations 1995 & 1998 The Fertilisers (Sampling and Analysis) Regulations 1991 Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP 3) Notification of Installations Handling Hazardous Substances (Amendment) Regulations 2002 (NIHHS) |

16 - OTHER INFORMATION

This safety data sheet provides health and safety information. The product is to be used in applications consistent with GrowHow literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. Please consult your GrowHow Advisor for any further advice. The product information in this data sheet is to the Company's knowledge correct at the date of publication. The user should contact the Company for updated advice and in any event must be satisfied that the product is entirely suited for its purpose. The Company accepts no 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. Freedom from patent restrictions cannot be assumed.

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| Reference | F04 |
| Revision Number | 06 * (new format) |
| Date of Issue | October 2009 |

* **Significant changes since the last revision are highlighted in bold italics**