



Heartland[®] Sulphur

1 - IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY

Tradename	Heartland[®] Sulphur
Designation	EC Fertiliser; NPK(S) 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

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, calcium sulphate and potash,. Coated with materials which include oil, amine and talc.
Form	Grey / white / pink granules.
Concentration	24% total nitrogen w/w present as ammonium nitrate. 8% w/w P ₂ O ₅ present as ammonium phosphates. 8% w/w K ₂ O present as potassium chloride and potassium nitrate. 8% w/w SO ₃ present as ammonium sulphate.
Classification	Not classified as a material hazardous for supply according to EC Directive 1999/45/EC.

3 – HAZARDS IDENTIFICATION

Human Health	Heartland [®] Sulphur 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	Heartland [®] Sulphur is a complex NPK(S) 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	Heartland [®] Sulphur 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. Heartland [®] Sulphur 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 Heartland [®] Sulphur 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.



Heartland[®] Sulphur

4 - FIRST AID MEASURES

Product

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

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

If Heartland [®] Sulphur is not directly involved in the fire:	Use the best available means to extinguish the fire.
If Heartland [®] Sulphur 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 Heartland [®] Sulphur by oils or other combustible materials. Inform the local authorities immediately if water containing fertiliser enters any drains or watercourse. If Heartland [®] Sulphur 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

Spillages	Any spillage of Heartland [®] Sulphur 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.
-----------	---

7 - HANDLING & STORAGE

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 Heartland [®] Sulphur 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 Heartland [®] Sulphur 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 Heartland [®] Sulphur in direct sunlight to minimise the risk of product breakdown due to thermal cycling.



Heartland[®] Sulphur

8 - EXPOSURE CONTROL / PERSONAL PROTECTION

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 Heartland [®] Sulphur 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

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). Heartland [®] Sulphur 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

Stability	Heartland [®] Sulphur 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 Heartland [®] Sulphur 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

General	Heartland [®] Sulphur 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



Heartland[®] Sulphur

12 - ECOLOGICAL INFORMATION

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	Heartland [®] Sulphur does not show any bio-accumulation phenomena.
Eco-toxicity	Low toxicity to aquatic life.

13 - DISPOSAL CONSIDERATIONS

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.
----------	---

14 - TRANSPORT INFORMATION

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

15 - REGULATORY INFORMATION

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.

Reference	F72
Revision Number	05 *
Date of Issue	May 2008

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

© Heartland is a registered trademark of GrowHow UK Ltd