

## 1 - IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY

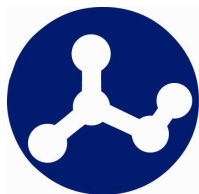
Tradename	N-Tech <sup>®</sup>
Designation	Ammonium nitrate
Company address	GrowHow UK Ltd, Ince, Chester CH2 4LB
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<b>In case of Emergency telephone</b>	<b>+44(0) 1642151 357 550 022</b>

## 2 – HAZARDS IDENTIFICATION

Human Health	N-Tech <sup>®</sup> 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 gastro-intestinal 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	N-Tech <sup>®</sup> is an N(S) fertiliser containing nitrate. 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	N-Tech <sup>®</sup> 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. N-Tech <sup>®</sup> 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 N-Tech <sup>®</sup> under strong confinement (e.g. in tubes and drains) may lead to a violent reaction or explosion especially if contaminated by some of the substances mentioned in Section 10.

## 3 – COMPOSITION / INFORMATION ON INGREDIENTS

CAS Number	6484-52-2
EINECS Number	299-347-8
EINECS Name	Ammonium Nitrate
Molecular Formula	NH <sub>4</sub> NO <sub>3</sub>
Product description	Ammonium nitrate containing a small amount of magnesium nitrate.
Form	Solid white prills.
Concentration	34.5%N (98.6% Ammonium Nitrate) Not more than 0.02% chloride Not more than 10 ppm copper Not more than 0.2% total combustible material
Classification	Not classified as a material hazardous for supply according to EC Directive 1999/45/EC.



## 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

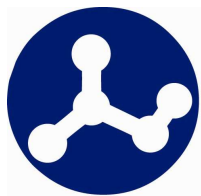
If N-Tech <sup>®</sup> is <u>not directly involved</u> in the fire:	Use the best available means to extinguish the fire.
If N-Tech <sup>®</sup> is <u>involved</u> in the fire:	Call the fire brigade. Avoid breathing the fumes (toxic). Stand upwind of the fire. Use a self-contained breathing apparatus 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 ammonium nitrate to run into drains. Prevent any contamination of N-Tech <sup>®</sup> by oils or other combustible materials. Inform the local authorities immediately if water containing ammonium nitrate enters any drains or watercourse. If N-Tech <sup>®</sup> 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 N-Tech <sup>®</sup> 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

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 N-Tech <sup>®</sup> over long periods.
Storage	Locate away from sources of heat or fire. Keep away from combustible materials and substances mentioned in Section 10. Ensure that N-Tech <sup>®</sup> 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 N-Tech <sup>®</sup> in direct sunlight to minimise the risk of product breakdown due to thermal cycling.



## 8 - EXPOSURE CONTROL / PERSONAL PROTECTION

Occupational Exposure Limits	No specific HSE limit. A total inhalable dust standard for nuisance dust of 10 mg/m <sup>3</sup> 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 N-Tech <sup>®</sup> 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	Solid white prills
Odour	Odourless
pH water solution (100g/l)	>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). 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 <sup>3</sup>
Solubility in water	Pure ammonium nitrate: 1900 g/l at 20°C.

Hygroscopic - readily picks up moisture from the air.

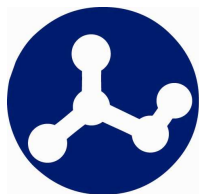
## 10 - STABILITY AND REACTIVITY

Stability	N-Tech <sup>®</sup> 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 N-Tech <sup>®</sup> without first washing thoroughly to remove all ammonium nitrate.
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	N-Tech <sup>®</sup> 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).



## 12 - ECOLOGICAL INFORMATION

Mobility	The NO <sub>3</sub> <sup>-</sup> ion is mobile. The NH <sub>4</sub> <sup>+</sup> ion is adsorbed by soil particles. The K <sup>+</sup> 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.
Bio-accumulation	N-Tech <sup>®</sup> does not show any bio-accumulation phenomena.
Eco-toxicity	Low toxicity to aquatic life. TLM between 10-100 ppm.

## 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.
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## 14 - TRANSPORT INFORMATION

Proper Shipping Name	AMMONIUM NITRATE
UN No.	UN 1942
Class	5.1
Packaging group	III
Emergency Action Code (CDG)	1Z
HIN (ADR,RID)	50

## 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	Ammonium Nitrate Materials (High Nitrogen Content) Safety Regulations 2003
	The Fertilisers Regulations 1991 and Amendment Regulations 1995 & 1998
	The Fertilisers (Sampling and Analysis) Regulations 1991
	The EC Fertilisers (England and Wales, Scotland, Northern Ireland) Regulations 2006
	Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 (CHIP 3)
	The Carriage of Dangerous Goods and use of Transportable Pressure Equipment Regulations 2009
	Control of Major Accident Hazards (COMAH) Regulations 1999 and Amendment Regulations 2005
	Notification of Installations Handling Hazardous Substances (Amendment) Regulations 2002 (NIHHS)
	Dangerous Goods Emergency Action Code List 2009

## 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 GrowHow Technical Services Manager 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	N-Tech	(N-Tech <sup>®</sup> is a registered trademark of GrowHow UK Limited).
Revision Number	1	Growhow
Date of Issue	Jan 2010	