

SAFETY DATA SHEET

Section 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Trade name or designation of the mixture Agrotain® Plus Nitrogen Stabilizer

Registration number -

Synonyms AGROTAIN® Plus; AGROTAIN® Plus EZ flow

SDS number KAS_AgroPlus_EU_EN

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Relevant identified uses of the substance or mixture and uses advised against

Identified uses Fertilizer Coating

Uses advised against Use in accordance with supplier's recommendations.

Details of the supplier of the safety data sheet

Manufacturer Koch Agronomic Services, LLC
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Wichita, KS 67220 US
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1.866.863.5550

Emergency For Chemical Emergency
Call CHEMTREC day or night
USA/Canada - 1.800.424.9300
Outside USA/Canada - 1.703.527.3887
(collect calls accepted)

Supplier Harlan Laboratories Ltd
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DE72 2GD United Kingdom
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Section 2: Hazards identification

Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Repr. Cat. 2;R61, Repr. Cat. 3;R62, Xi;R36

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Serious eye damage/eye irritation	Category 1	Causes serious eye damage.
Reproductive toxicity	Category 1B	May damage the unborn child.
Reproductive toxicity	Category 2	Suspected of damaging fertility.

Hazard summary

Physical hazards Not classified for physical hazards.

Health hazards May cause harm to the unborn child. Irritating to eyes. Possible risk of impaired fertility.

Environmental hazards Not classified for hazards to the environment.

Specific hazards Causes serious eye damage. Possible reproductive hazard - contains material that may cause adverse reproductive effects.

Main symptoms Symptoms include itching, burning, redness, and tearing of eyes. Dust may irritate skin and the respiratory system.

Label elements

Label according to Regulation (EC) No. 1272/2008 as amended**Contains:** N-(n-butyl)-thiophosphoric triamide, N-methyl-2-pyrrolidone**Signal word** Danger**Hazard statements** Causes serious eye damage. May damage the unborn child. Suspected of damaging fertility.**Precautionary statements****Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves/clothing and eye/face protection.**Response** IF exposed or concerned: Get medical advice/attention.**Storage** Store locked up.**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.**Supplemental label information** Restricted to professional users.**Other hazards** Not a PBT or vPvB substance or mixture.**Section 3: Composition/information on ingredients****Mixture****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Dicyandiamide	60 - 100	461-58-5 207-312-8	-	-	
Classification:	DSD: - CLP: -				
N-(n-butyl)-thiophosphoric triamide	3 - 7	94317-64-3 435-740-7	-	-	
Classification:	DSD: Repr. Cat. 3;R62, Xi;R41 CLP: Eye Dam. 1;H318, Repr. 2;H361				
Non hazardous component	3 - 7	Proprietary -	-	-	
Classification:	DSD: - CLP: -				
N-methyl-2-pyrrolidone	1 - 5	872-50-4 212-828-1	-	606-021-00-7	#
Classification:	DSD: Repr. Cat. 2;R61, Xi;R36/37/38 CLP: Skin Irrit. 2;H315, Eye Irrit. 2;H319, STOT SE 3;H335, Repr. 1B;H360D				
Non hazardous dye	< 1	Proprietary -	-	-	
Classification:	DSD: - CLP: -				

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

#: This substance has workplace exposure limit(s).

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. The full text for all R- and H-phrases is displayed in section 16.

This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

Section 4: First aid measures**General information**

Keep victim warm. Keep victim under observation.

Description of first aid measures

Inhalation	Remove from area of exposure. For breathing difficulties, oxygen may be necessary.
Skin contact	Immediately flush skin with plenty of water. Get medical attention if irritation develops and persists.
Eye contact	Dust in the eyes: Do not rub eyes. Remove contact lenses, if present and easy to do. Flush eyes thoroughly with water for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control centre. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.
Most important symptoms and effects, both acute and delayed	Symptoms include itching, burning, redness, and tearing of eyes. Dust may irritate skin. Dust may irritate respiratory system.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically. The effects might be delayed.

Section 5: Firefighting measures

General fire hazards	The product is not flammable.
Extinguishing media	
Suitable extinguishing media	Water fog. Water spray. Carbon dioxide (CO ₂). Foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Special hazards arising from the substance or mixture	Fire may produce irritating, corrosive and/or toxic gases.
Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.
Special firefighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials. Cool material exposed to heat with water spray and remove it if no risk is involved.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stay upwind.
For emergency responders	Wear protective clothing as described in Section 8 of this safety data sheet.
Environmental precautions	Prevent further leakage or spillage if safe to do so.
Methods and material for containment and cleaning up	Powder Spills: Cover powder spill with plastic sheet or tarpaulin to minimise spreading and keep powder dry. Shovel into dry containers. Cover and move the containers. Flush the area with water. Avoid the generation of dusts during clean-up.
Reference to other sections	For personal protection, see section 8. For waste disposal, see section 13.

Section 7: Handling and storage

Precautions for safe handling	Avoid exposure - obtain special instructions before use. Wear appropriate personal protective equipment. Avoid generation and spreading of dust. Avoid inhalation of dust and contact with eyes. Avoid prolonged exposure. Handle and open container with care. Wash before eating, drinking and/or smoking. Wash thoroughly after handling.
Conditions for safe storage, including any incompatibilities	Avoid exposure - obtain special instructions before use. Use care in handling/storage. Store in tightly closed original container in a well-ventilated place. Keep away from food, drink and animal feeding stuffs. Store in accordance with local/regional/national/international regulation. Keep out of reach of children. Long term storage at temperatures above 100°F (36°C), and long term storage of opened containers, will cause the product to degrade. As the product degrades, it can release harmful gases. Store below 100°F (36°C) and use opened containers within 30 days. Always use oldest stock first.
Specific end use(s)	Fertilizer Coating

Section 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Dust (-)	TWA	4 mg/m ³ 10 mg/m ³	Respirable dust. Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
N-methyl-2-pyrrolidone (872-50-4)	STEL	309 mg/m ³	
	TWA	75 ppm 103 mg/m ³ 25 ppm	

EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents.

Components	Type	Value
N-methyl-2-pyrrolidone (872-50-4)	STEL	80 mg/m ³
	TWA	20 ppm 40 mg/m ³ 10 ppm

Recommended monitoring procedures Follow standard monitoring procedures.

DNEL Not available.

PNEC

Components	Type	Route	Value
N-methyl-2-pyrrolidone (872-50-4)	Aqua (freshwater)	Not applicable	0.25 mg/l
	Not applicable	Not applicable	0.25 mg/l

Exposure controls

Appropriate engineering controls Provide adequate general and local exhaust ventilation. Provide eyewash station.

Individual protection measures, such as personal protective equipment

General information Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Chemical goggles are recommended.

Skin protection

- Hand protection Neoprene gloves are recommended.

- Other Chemical resistant clothing is recommended.

Respiratory protection Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter. Wear respiratory protection during operations where spraying or misting occurs.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures Wash hands after handling. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls Environmental manager must be informed of all significant spillages.

Section 9: Physical and chemical properties**Information on basic physical and chemical properties**

Appearance Powder or granules.

Physical state Solid.

Form Powder or granules.

Colour Blue.

Odour Slight ammonia.

Odour threshold Not available.

pH 7.5 - 8.2

Melting point/freezing point Not available.

Boiling point, initial boiling point, and boiling range Not available.

Flash point Not applicable.

Auto-ignition temperature Not applicable.

Flammability (solid, gas) Not applicable.

Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Oxidising properties	Not applicable.
Explosive properties	Not applicable.
Explosive limit	Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Relative density	Not available.
Density	29 - 34 lb/ft ³ (20°C)
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Percent volatile	Not available.
Other information	No relevant additional information available.

Section 10: Stability and reactivity

Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions.
Possibility of hazardous reactions	Hazardous polymerisation does not occur.
Conditions to avoid	Extreme temperatures.
Incompatible materials	Acids. Strong reducing agents. Strong oxidising agents.
Hazardous decomposition products	Ammonia. Butyl amide. Phosphoric acid. During combustion: Carbon oxides. Nitrogen oxides. Sulphur oxides.

Section 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.
Information on likely routes of exposure	
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Inhalation	Dust may irritate throat and respiratory system and cause coughing.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Risk of serious damage to eyes.
Symptoms	Contact may cause eye irritation with redness, tearing, pain, and/or blurred vision.
Information on toxicological effects	
Acute toxicity	May cause severe irritation to eyes. May cause skin and respiratory tract irritation.

Components	Test results
N-methyl-2-pyrrolidone (872-50-4)	Acute Dermal LD50 Rabbit: 8000 mg/kg Acute Dermal LD50 Rat: > 5000 mg/kg Acute Inhalation LC50 Rat: > 5.1 mg/l Acute Oral LD50 Rat: 3914 mg/kg
N-(n-butyl)-thiophosphoric triamide (94317-64-3)	Acute NOAEL Rat: 445 mg/kg 1 day Acute Dermal LD50 Rat: > 2000 mg/kg Acute Oral LD50 Rat: > 2823 mg/kg
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory sensitisation	Not classified.
Skin sensitisation	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.

Reproductive toxicity	Possible reproductive hazard.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	May adversely affect the liver and kidney based on animal testing
Aspiration hazard	Not classified.
Mixture versus substance information	Not available.
Other information	Symptoms may be delayed.

Section 12: Ecological information

Toxicity

Components	Test results
N-methyl-2-pyrrolidone (872-50-4)	EC50 Daphnia magna: > 1000 mg/l 24 hours
N-(n-butyl)-thiophosphoric triamide (94317-64-3)	EC50 Daphnia: 290 mg/l 48 hours LC50 Fish: 1140 mg/l 96 hours NOEL Daphnia: 150 mg/l
Persistence and degradability	The product is not readily biodegradable.
Bioaccumulative potential	Not available.
Mobility	The product is soluble in water.
Environmental fate - Partition coefficient	Not available.
Mobility in soil	Not available.
Results of PBT and vPvB assessment	Not available.
Other adverse effects	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Section 13: Disposal considerations

Waste treatment methods

Residual waste	Dispose in accordance with all applicable regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	Waste codes should be assigned by the user based on the application for which the product was used.
Disposal methods/information	Do not discharge into drains or water courses.

Section 14: Transport information

ADR

The product is not covered by international regulation on the transport of dangerous goods.

RID

The product is not covered by international regulation on the transport of dangerous goods.

ADN

The product is not covered by international regulation on the transport of dangerous goods.

IATA

The product is not covered by international regulation on the transport of dangerous goods.

IMDG

The product is not covered by international regulation on the transport of dangerous goods.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code No information available.

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex I

Not listed.

Regulation (EC) No. 2037/2000 on substances that deplete the ozone layer, Annex II

Not listed.

Regulation (EC) No. 850/2004 on persistent organic pollutants, Annex I

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V

Not listed.

Directive 96/61/EC concerning integrated pollution prevention and control (IPPC): Article 15, European Pollution Emission Registry (EPER)

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List

Not listed.

Other regulations	This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended. The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives.
National regulations	The product has been classified according to the legislation in force.
Chemical safety assessment	No Chemical Safety Assessment has been carried out.

Section 16: Other information

List of abbreviations	DNEL: Derived No-Effect Level. PNEC: Predicted No-Effect Concentration. PBT: Persistent, bioaccumulative and toxic. vPvB: Very Persistent and very Bioaccumulative. LD50: Lethal Dose, 50%. LC50: Lethal Concentration, 50%.
References	Not available.
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any statements or R-phrases and H-phrases under Sections 2 to 15	R36 Irritating to eyes. R36/37/38 Irritating to eyes, respiratory system and skin. R41 Risk of serious damage to eyes. R61 May cause harm to the unborn child. R62 Possible risk of impaired fertility. H315 - Causes skin irritation. H318 - Causes serious eye damage. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H360D - May damage the unborn child. H361 - Suspected of damaging fertility or the unborn child.
Training information	Not available.
Disclaimer	NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.
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