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

Product identifier

Trade name: **CANNA CALMAG**
Synonym(s): -

Relevant identified uses of the substance or mixture and uses advised against: Liquid fertilizer.
Product category: Product Category 12 (PC12 Fertilizers), Sector of Use 21 (SU21 Consumer uses).

Details of the supplier of the safety data sheet

Manufacturer/supplier:
CANNA UK (Grow United Ltd),
3rd Floor, 207 Regent Street,
W1B 3HH, London,
United Kingdom

Tel.: +44 (0) 870 240 2991
Email: uk@canna.com

Further information obtainable from:
Contact person: N. Linton
Tel.: +31 (0) 162-68 10 70
Email: msds@canna.com
Working hours (business days): 09:00-17:00.

Emergency telephone number
United Kingdom: UWIC: +44 (0) 29 204 16388

SECTION 2: Hazards identification

Classification of the substance or mixture

Classification in accordance with Regulation (EC) no. 1272/2008
Eye Irrit. 2 H319
Acute Tox. 4 H302

Label elements and precautionary statement
Hazard pictograms:

Signal word: Warning.
Hazard statements:
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
Precautions:
P102 Keep out of reach of children.
P270 Do not eat, drink or smoke when using this product.
P280 Wear eye protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.

Hazard-determining components for labelling: Calcium nitrate.

Other hazards
Void.

Results of PBT and vPvB assessment
PBT: No.
vPvB: No.

SECTION 3: Composition/information on ingredients

Chemical characterization: Mixture.
Description: Preparation based on substances including water, calcium nitrate and magnesium nitrate.

Hazardous ingredients
Calcium nitrate
CAS#: 10124-37-5
EC#: 233-332-1
REACH reg.#: 01-2119495093-35
Content (W/W): 20 - 50 %
Danger:
1272/2008/EC: Ox. Sol. 2; H272 - Acute Tox. 4; H302 - Eye Irrit. 2; H319.

Magnesium nitrate
CAS#: 10377-60-3
EC#: 233-826-7
REACH reg.#: 01-2119491164-38
Content (W/W): 0.1 - 1 %
Danger:
1272/2008/EC: Ox. Sol. 2; H272.

Full text of H- and EUH-phrase(s): see section 16.

SECTION 4: First aid measures

Description of first aid measures
General information:
Get medical attention if symptoms persist.
Inhalation:
Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact:
Remove contaminated clothing. Wash with water and soap.
Eye contact:
Remove contact lenses, if present, and immediately rinse eyes while holding eyelids open for a sufficient period of time (at least 15 minutes) with lukewarm water. Help the victim with the rinsing process.
Ingestion:
Rinse mouth immediately with water (if conscious), and then drink plenty of water. Do not induce vomiting. If the person feels unwell consult a physician or take victim to hospital (show packaging, label or SDS to physician). Place unconscious person on the side in the recovery position. Loosen tight clothing such as a shirt collar, tie, belt or waistband. Keep at rest.

Most important symptoms and effects, both acute and delayed
Inhalation:
Exposure to vapour concentrations of component dusts higher than the MAC value can be harmful to the health. Potential health effects include: sore throat, cough, shortness of breath. Effects may be delayed.

Skin contact:
Redness.
Eye contact:
May cause irreversible damage to the eyes. Redness. Pain.
Ingestion:
Abdominal cramp, nausea, blue skin, feeling of weakness. Contains calcium nitrate which, after ingestion, may cause blood damage (methemoglobinemia).

Indication of any immediate medical attention and special treatment needed
Symptomatic treatment and supportive therapy as prescribed.

SECTION 5: Firefighting measures

Extinguishing media
Suitable extinguishing media:
CO2, extinguishing powder or water jet. Fight larger fires with water spray.
Foam.
Sand.
Adapt extinguishing measures to suit the environment.
Unsuitable extinguishing media:
Powerful water jet.

Special hazards arising from the substance or mixture
During heating or in case of fire, poisonous gases may be produced.
May be released in event of fire:
Nitrogen oxides (NOx).

Advice for firefighters
Special protective clothing:
Wear self-contained breathing apparatus.

Other information
No specific requirements.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Ensure sufficient ventilation.
Wear personal protective equipment.

Environmental precautions
Do not allow large quantities of product to reach sewage/surface water/groundwater in concentrated form.
Notify competent authorities in case of release of large quantities into the environment.

Methods and material for containment and cleaning up
Soak up immediately with absorbent material (sand, dry earth).
Recycle, if possible.
Collect in suitable containers for disposal.
Then flush away residue with plenty of water.

Reference to other sections
Information regarding safe handling – see section 7.
Information regarding personal protective equipment – see section 8.
Information regarding disposal – see section 13.

SECTION 7: Handling and storage

Handling

Precautions for safe handling:
Open and handle package with care.
Wear suitable protective clothing.
Ventilation is recommended.
Do not smoke, eat or drink during use.
Information about fire - and explosion protection:
No specific requirements.

Conditions for safe storage, including any incompatibilities

Storage:
Close containers after each use.
Requirements to be met by storerooms and receptacles:
Preferably keep in the original packaging.
Keep in a dark place.
Store in a frost-free environment.
Protect against heat and direct sunlight.
Suitable packaging material: Polyethylene.
Suitable material for tanks and pipelines: Stainless steel, PVC.
Information about storage in one common storage facility:
Install partitions in the drip tray to prevent acidic and alkaline fertilisers from coming into contact with one another.
Further information about storage conditions:
Recommended storage temperature 10 - 30 °C.

Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection

Control parameters

Ingredients with limit values that require monitoring at the workplace:
Void.

Hazardous ingredients with DN(M)EL:				
Product information: 10124-37-5 Calcium nitrate	Exposure	Value	Unit	Population / Effects
DN(M)EL	Short-term dermal	-	mg/kg bw/day	Workers Local
DN(M)EL	Short-term inhalation	-	mg/m^3	Workers Local
DN(M)EL	Long-term dermal	13.9	mg/kg bw/day	Workers Systemic
DN(M)EL	Long-term inhalation	24.5	mg/m^3	Workers Systemic
DN(M)EL	Long-term dermal	-	mg/kg bw/day	Workers Local
DN(M)EL	Long-term inhalation	-	mg/m^3	Workers Local
DN(M)EL	Short-term dermal	-	mg/kg bw/day	General population Local
DN(M)EL	Short-term inhalation	-	mg/m^3	General population Local

DN(M)EL	Long-term dermal	8.33	mg/kg bw/day	General population Systemic
DN(M)EL	Long-term inhalation	6.3	mg/m^3	General population Systemic
DN(M)EL	Long-term oral	8.33	mg/kg bw/day	General population Systemic
DN(M)EL	Long-term dermal	-	mg/kg bw/day	General population Local
DN(M)EL	Long-term inhalation	-	mg/m^3	General population Local

Hazardous ingredients with DN(M)EL:				
Product information: 10377-60-3 Magnesium nitrate	Exposure	Value	Unit	Population / Effects
DN(M)EL	Short-term dermal	-	mg/kg bw/day	Workers Local
DN(M)EL	Short-term inhalation	-	mg/m^3	Workers Local
DN(M)EL	Long-term dermal	20.8	mg/kg bw/day	Workers Systemic
DN(M)EL	Long-term inhalation	36.7	mg/m^3	Workers Systemic
DN(M)EL	Long-term dermal	-	mg/kg bw/day	Workers Local
DN(M)EL	Long-term inhalation	-	mg/m^3	Workers Local
DN(M)EL	Short-term dermal	-	mg/kg bw/day	General population Local
DN(M)EL	Short-term inhalation	-	mg/m^3	General population Local
DN(M)EL	Long-term dermal	12.5	mg/kg bw/day	General population Systemic
DN(M)EL	Long-term inhalation	10.9	mg/m^3	General population Systemic
DN(M)EL	Long-term oral	12.5	mg/kg bw/day	General population Systemic
DN(M)EL	Long-term dermal	-	mg/kg bw/day	General population Local
DN(M)EL	Long-term inhalation	-	mg/m^3	General population Local

Hazardous ingredients with PNEC:			
Product information: 10124-37-5 Calcium nitrate	Value	Unit	Compartment
PNEC	0.45	mg/l	Fresh water
PNEC	0.045	mg/l	Marine water
PNEC	4.5	mg/l	Intermittent releases
PNEC	18	mg/l	STP (sewage treatment plant)
PNEC	-	mg/kg dwt	Sediment fresh water
PNEC	-	mg/kg dwt	Sediment marine water
PNEC	-	mg/kg wwt	Soil

PNEC	No bio-accumulation potential	mg/l	Oral (foodstuffs)

Hazardous ingredients with PNEC:			
Product information: 10377-60-3 Magnesium nitrate	Value	Unit	Compartment
PNEC	0.45	mg/l	Fresh water
PNEC	0.045	mg/l	Marine water
PNEC	4.5	mg/l	Intermittent releases
PNEC	18	mg/l	STP (sewage treatment plant)
PNEC	-	mg/kg dwt	Sediment fresh water
PNEC	-	mg/kg dwt	Sediment marine water
PNEC	-	mg/kg wwt	Soil
PNEC	No bio-accumulation potential	mg/l	Oral (foodstuffs)

Exposure controls

Personal protective equipment:
Remove immediately all contaminated clothing.
Store protective clothing separately.
Avoid contact with the eyes.
Wash hands thoroughly after handling this product.
General protective and hygienic measures:
Keep away from foodstuffs and beverages.
Do not eat, drink or smoke when using this product.
The usual precautionary measures are to be adhered to when handling chemicals.
Respiratory protection:
No specific requirements, normal room ventilation will suffice.

Hand protection:

Safety gloves.

The glove material (EN374) has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
Glove material
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Penetration time of glove material
The exact breakthrough time can be obtained from the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tight fitting safety goggles. Eye shower.

Body protection:
Wear suitable protective work clothing (in case of splash risk).

Measuring procedures:
In order to establish compliance with an exposure limit and to establish that exposure is properly controlled, it may be necessary to determine the concentration of the substances in the inhalation zone or in the general workspace.

Environmental exposure controls:
Leakage of the material and concentrated solution must be stopped. Leakage of large quantities into sewage, surface waters and groundwater must be avoided because the material contains calcium nitrate which may lead to eutrophication.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

General information	
Appearance	
Form:	Liquid.
Colour:	Yellow / orange.
Odour:	Odourless.
Odour threshold:	Not determined.
pH-value	2.5.
Change in condition	
Melting point/melting range:	Not determined.
Boiling point/boiling range:	Not determined.
Flash Point:	Not determined.
Flammability (solid, gas):	Not applicable.
Auto-ignition temperature:	Not determined.
Explosion hazard:	Not determined.
Explosive limits	
Lower:	Not determined.
Upper:	Not determined.
Vapour pressure:	Not determined.
Relative density:	1.258 (water = 1).
Vapour density:	Not determined.
Evaporation rate:	Not determined.
Solubility in/miscibility with water:	Fully.
Partition coefficient n-octanol/water:	Not determined.
Viscosity	
Dynamic:	Not determined.
Kinematic:	Not determined.
Other information	No further relevant information available.

SECTION 10: Stability and reactivity

Reactivity

Chemical stability:
The product is stable if stored and handled as prescribed.
Thermal decomposition/Conditions to be avoided:
No decomposition if used as prescribed. Avoid storing at high temperatures (> 30 °C) to prevent degradation of the material or pressure build-up. Avoid low temperatures (< 10 °C) to prevent crystallization from occurring.
Material is susceptible to frost.

Possibility of hazardous reactions

Contact with strong reducing agents, strong acids and bases.

Conditions to avoid

Avoid heat, sparks, open flames, and other sources of ignition. Prevent evaporation in a non-ventilated environment. Protect against heat and direct sunlight. Protect against frost.

Incompatible materials

Reducing agents, strong acids and bases, metal powders, combustible materials, dimethylformamide. Contains urea which reacts with sodium or calcium hypochlorite to form explosive nitrogen trichloride.

Hazardous decomposition products

No hazardous decomposition products are formed if stored under normal conditions. In case of heating or fire, irritating or toxic vapours such as nitrogen oxides may be released.

SECTION 11: Toxicological information

Toxicology information

Acute toxicity from the components:

LD/LC50 values relevant for classification:		
Product information: 10124-37-5	Calcium nitrate	
Oral	LD50	1000 mg/kg (rat) (OECD 423)
Inhalation	LC50	-
Dermal	LD50	> 2000 mg/kg (rat) (OECD 402)
Product information: 10377-60-3	Magnesium nitrate	
Oral	LD50	> 5000 mg/kg (rat) (OECD 423)
Inhalation	LC50 (4 h)	-
Dermal	LD50	> 5000 mg/kg (rat) (OECD 402)

The following health risk assessment is based on an assessment of the various ingredients in the product.

Primary irritant effect:
on the skin:
-
to the eye:
Irritant / corrosive effect.

Germ cell mutagenicity:
Not classified.
Reproductive and developmental toxicity:
Not classified.
Sensitisation:
No sensitising effects known.
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):
Not classified.
Other information:
No further relevant information available.

SECTION 12: Ecological information

Toxicology information

Ecotoxicity from the components:

Aquatic toxicity:		
Product information: 10124-37-5	Calcium nitrate	
Fish	LC50 (96 h)	> 98.9 mg/l (OECD 203)
Water flea	EC50	490 mg/l (daphnia magna)
Algae	EC50	-
Bacteria	EC50	-
Product information: 10377-60-3	Magnesium nitrate	
Fish	LC50 (96 h)	191 mg/l (95% CI 391-513)
Water flea	EC50 (96 h)	490 mg/l (daphnia magna)
Algae	EC50	-
Bacteria	EC50	-

The following ecological risk assessment is based on an assessment of the various ingredients in the product.

Persistence and degradability
Partially inorganic and presumed to be partially biodegradable over the long-term.

Behaviour in environmental compartments
Bioaccumulative potential:
Bioaccumulation in organisms is not expected.
Mobility in soil:
No further relevant information available.

Further ecological information
General information:
Water hazard class 1 (German regulation) (Self-assessment): slightly hazardous to water. Do not discharge undiluted product into groundwater, surface water or sewage system.

Results of PBT and vPvB assessment
The mixture does not meet all of the assessment criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

Other adverse effects
Contains substances that contribute to eutrophication: Nitrates.

SECTION 13: Disposal considerations

Waste treatment methods
Recommendation:
May be brought to a supervised incineration plant in compliance with local regulations.
EC Regulation for Disposal of Waste (EWC):
06 10 02* WASTES FROM INORGANIC CHEMICAL PROCESSES, wastes from the MFSU of nitrogen chemicals, nitrogen chemical processes and fertiliser manufacture; waste containing dangerous substances.

Uncleaned packaging
Recommendation:
Disposal must be made according to official regulations. Empty the packaging with care. Do not contaminate soil, water or environment with the waste container. Comply with local regulations with regard to the recovery or disposal of waste.

SECTION 14: Transport information

Land transport ADR/RID (cross-border)

ADR/GGVSEB class:	Not a dangerous good according to the transport regulations.
Hazard identification number:	-
UN number:	-
Packing group:	-
Label:	-
Special marking:	-
UN proper shipping name:	-
Tunnel restriction code:	-

Inland shipping ADN/ADR

ADN/R-class:	-
UN number:	-
Subsidiary risk	
Environmental hazards:	-

CMR properties:	-
Buoyancy:	-

Maritime transport IMDG

IMDG-class:	-
UN number:	-
Label:	-
Packing group:	-
EMS number:	-
Marine pollutant:	-
Proper shipping name:	-

Air transport ICAO-TI and IATA-DGR

ICAO/IATA-class:	-
UN number:	-
Label:	-
Packing group:	-
Proper shipping name:	-

Environmental hazards
No.

Special precautions for user
None.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No further relevant information available.

SECTION 15: Regulatory information

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

EU regulations and directives which affect this mixture (not yet directly or indirectly mentioned):
Directive 89/686/EEC Personal protective equipment.
Directive 98/24/EC Risks related to chemical agents at work.
Regulation 2003/2003/EC Concerning fertilisers.
Regulation (EC) No 1272/2008 On classification, labelling and packaging of substances and mixtures.
Regulation (EU) 2015/830 Of the Commission of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Chemical safety assessment
A chemical safety assessment has not been carried out.

SECTION 16: Other information

This information is based on the current state of our knowledge. It should not be construed as any guarantee of product characteristics, nor does it establish a legally valid contractual relationship.

List of relevant H- and EUH-phrases from sections 2 and 3
H272 May intensify fire; oxidiser.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.

Trade name: CANNA CALMAG

Document history

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Initial version.
Version: 1.0.

Abbreviations and acronyms:

ADR:	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID:	Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG:	International Maritime Code for Dangerous Goods
IATA:	International Air Transport Association
IATA-DGR:	Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO:	International Civil Aviation Organization
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO)
P:	Marine pollutant:
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals
CAS:	Chemical Abstracts Service (division of the American Chemical Society)
EC50:	Half maximal effective concentration
LC50:	Lethal concentration, 50 percent
LD50:	Lethal dose, 50 percent
OEL:	Occupational Exposure Limit
NOEC:	No Observed Effect Concentration
vPvB:	Very Persistent and Very Bioaccumulative
PBT	Persistent, Bioaccumulative and Toxic substance
EWC:	European Waste Catalogue
TWA	Time-Weighted Average
DNEL:	Derived No-Effect Level
DMEL:	Derived Minimal Effect Level
PNEC:	Predicted No-Effect Concentration