	SAFETY DATA SHEET	
	GHF - CALMAG	
	Date of issue: 07.01.2025	Version: 1.1

According to REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 amended Commission Regulation (EU) 2020/878 of 18 June 2020

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name: GHF CALMAG

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

Use of the substance/mixture: as fertilizer (foliar, fertigation, soil); as intermediate or chemical agent to synthesize other substances.

Uses advised against – not identified. 1.3.

Details of the supplier of the safety data sheet:

PF Trading B.V
Keienbergweg 49
1101EX Amsterdam
The Netherlands
Tel: +31(0)207163834
VAT: NL852326932B01

e-mail address for a competent person responsible for the safety data sheet: shop@greenhousefeeding.com

1.4. Emergency telephone number In case of emergency call: +31(0)207163834

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Regulation 1272/2008 (CLP)

Acute Tox. 4, H302: Harmful if swallowed.

Eye Dem. 1, H318: Causes serious eye damage

2.2. Label elements

Labelling in accordance with Regulation 1272/2008 (CLP)



Danger

H302: Harmful if swallowed.

H318: Causes serious eye damage.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product

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P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P330: Rinse mouth

P310: Immediately call a POISON CENTER or doctor/physician.

P501: Dispose content/containers to an authorized waste facility.

2.3. Other hazards

The mixture does not meet the criteria for PBT or vPvB in accordance with Annex XIII of the REACH Regulation. (see section 12). Does not contain substances included in the list established in accordance with Article 59(1) for having endocrine disrupting properties or identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances – not concern

3.2. Mixtures

Hazard substances

Substance	Concentration	CAS No EC No Index No	13446-18-9
Magnesium nitrate hexahydrate	38 % w/w	REACH No Classification according to Regulation 1272/2008	233-826-7 Not available
		CAS No EC No	Not classified
		Index No	10124-37-5
		REACH No Classification according to Regulation 1272/2008	233-332-1 Not available
Calcium nitrate	50 – 51 % w/w	CAS No	01-2119491164-38-xxxx
		EC No	6484-52-2
		Index No	229-347-8
		REACH No Classification according to Regulation 1272/2008	Acute Tox 4, H302 Eye Dem. 1, H318
Ammonium nitrate	2-3 % w/w	EC No	6484-52-2
		Index No	229-347-8
		REACH No Classification according to Regulation 1272/2008	Not available 01-2119490981-27-xxxx
		EC No	6484-52-2
		Index No	229-347-8
		REACH No Classification according to Regulation 1272/2008	Ox. Solid, H272 Eye Irrit. 2, H319

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

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General advice: The first step is to put the injured person from a contaminated environment.

If swallowed:	
1.	Rinse mouth, give 2-3 glasses of water to drink. Never give anything by mouth to an unconscious person.
2.	Seek medical attention.
In case of eye contact:	
1.	Immediately flush eyes with large amounts of water for at least 15 minutes while holding the eyelids open to ensure that the entire surface is flushed.
2.	Seek medical attention.
In case of skin contact:	
1.	Rinse off with plenty of water. Remove contaminated cloths.
2.	If symptoms persist, seek medical attention.
If inhaled	
1.	Unlikely route of exposure due to the form of the product - solid.
2.	Move to fresh air. If needed, seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.

4.3 Indication of any immediate medical attention and special treatment needed


Treatment: Symptomatic treatment.

SECTION 5. FIRE FIGHTING MEASURES

5.1. Extinguishing media	Use water only! Contact professional fire-fighters immediately. For small fires, do NOT use chemicals, carbon dioxide, halon or foams. For large fires flood fire with water from a distance. Hazardous decomposition / combustion products: produces
5.2. Special hazards arising from the substance or mixture	oxides of nitrogen on combustion: NyOx. Protective equipment: High temperatures may cause pressure build-up in closed containers. During the thermal decomposition produced of harmful compounds. Reduce dust and vapour with water spray. Brown fumes containing toxic nitrogen oxides Explosive mixture: Not applicable-non-explosive.
5.3. Advice for firefighters	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Clothing resistant to high temperatures. Independent self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

General advice:	Do not flush into public water courses. Do not empty into drains, ground or surface water and soil. If the product enters drains or water, immediately inform appropriate authorities. Use personal protective equipment (section 8).
6.1. Personal precautions, protective	Avoid contact with eyes.

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equipment and emergency procedures	Do not let this chemical enter the environment. Do not ingest. Do not let product enter drains. If the product enters drains or water, immediately inform appropriate authorities.
6.2. Environmental precautions	Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary:
6.3. Methods and material for containment and cleaning up	
6.4. Reference to other sections	Collect up the product and place it in a sealable container . Suitably labeled. Transfer carefully to container. Then take the spare containers to an area reserved for subsequent recycling or disposal. Do not put the cast down material back into the original container, for re-use. Avoid prolonged or repeated exposure. For disposal see section 13. For personal protective equipment see section 8.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling	Keep in original containers in a covered warehouse. Storage in dry area. Protect from direct sunlight. Keep away from incompatibles such as reducing agents, flammable agents, strong acids
7.2. Conditions for safe storage, including any incompatibilities	Keep away from foodstuffs, beverages and feed. Keep away from heat and sources of ignition.
7.3. Specific end use(s)	No data available.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Regulated occupational exposure limit values: none

Recommended occupational, consumer and environmental exposure limit values for main ingredient – calcium nitrate (following from the performed CSA):

Exposure pattern	Derived No Effect Level (DNEL)	
	Workers	General population
Oral1	Not applicable	8,33 3mg/kg bw/d
Dermal1	15,013,9 3mg/kg bw/day	8,33 3mg/kg bw/day
Inhalation1	98 mg/m ³	29 3mg/m
	Predicted No Effect Level (PNEC) ²	
Aqua-freshwater	0.45 mg/l	
Aqua-marine water	0.045 mg/l	
Aqua-intermittent release	4.5 mg/l	
STP	18 mg/l	

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¹: As the substance is classified for acute oral toxicity an acute DNEL should be derived for the general population. However, peak exposure is considered not possible and therefore an acute DNEL systemic will not be derived. Therefore, the long-term DNEL is considered sufficient to ensure that effects from acute oral exposure to the substance do not occur. As an dermal and inhalation acute toxicity hazard leading to Classification and Labelling of the substance has not been identified, the long-term DNEL is considered sufficient to ensure that effects from acute exposure to the substance do not occur (in accordance with ECHA Guidance on information requirements and chemical safety assessment: Chapter R.8: Characterisation of dose [concentration]-response for human health, May 2008 and Part B: Hazard Assessment, Draft new chapter B.8 Scope of Exposure Assessment, March 2010).

²: PNECsediment/soil/oral are not derived as these are not applicable/not relevant.

8.2. Exposure controls

Personal protective equipment:

Eye/face protection	Use safety goggles
Skin/hands protection	The selected protective gloves have to satisfy the specifications of UE Directive 89-689-EEC and standard EN 374 derived from it. Use work clothes and shoes.
Industrial hygiene:	Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with eyes.

Engineering Controls: No engineering controls.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid
Colour	White/yellowish
Odour	Specific
Melting point/freezing point	95°C at 1013 hPa
Boiling point or initial boiling point and boiling range	No data available
Flammability (solid, gas)	Not flammable
Upper and lower explosion limit	Not applicable-non-combustible
Flash point	Not applicable (solid)
Auto-ignition temperature	Not applicable (solid)
Decomposition temperature	No data available
pH value 10% sol.	6.0 – 7.0

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Kinematic viscosity	Not applicable (solid)
Solubility	220 g/100 g water
Partition coefficient: n-octanol/water (log value)	No data available
Vapour pressure	<0.00001 Pa at 20 ° C
Relative density	0.90 g/cm ³ ± 5%
Relative vapour density	No data available
Particle characteristics	97% > 2 mm

9.2 Other information

No data.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity -Reactive with strong reducing agents.

10.2 Chemical stability -Under normal storage and use of the substance is chemically stable.

10.3 Possibility of hazardous reactionsThe mixture reacts with strong reducing agents

10.4 Conditions to avoid -Avoid contact with strong heat sources such as solar radiation and flames.

10.5 Incompatible materials Strong reducing agents.

10.6 Hazardous decomposition productsIntensive heated to temperatures > 330 ° C followed by decomposition with emission of toxic gases (nitrogen oxides).

SECTION 11. TOXICOLOGICAL INFORMATION

There no available toxicological studies for the mixture as such. The assessment was made on the basis of ownership of components of the mixture.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

a) Acute toxicity: harmful if swallowed

ingestion: swallowing small amounts can cause headache, dizziness.

Swallowing large quantities can cause severe gastrointestinal disorders.

b) Skin corrosion/irritation - no irritating

c) Serious eye damage/eye irritation - Causes serious eye damage

d) Respiratory or skin sensitization - no skin or respiratory sensitization

e) Germ cell mutagenicity - no mutagenic

f) Carcinogenicity - no carcinogenic

g) Reproductive toxicity – The mixture is not a threat to fertility.

h) Specific target organ toxicity (STOT) - single exposure – not harmful

i) Specific target organ toxicity (STOT)- repeated exposure - not harmful

j) Aspiration hazard – not applicable

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Potential health effects No data available.
Signs and Symptoms of Exposure No data available.

ACUTE TOXICITY

	Calcium Nitrate	Amonium nitrate
Acute oral toxicity:	300 mg/kg bw < LD50 < 2000 mg/kg bw (OECD 423)	LD50: 2950 mg/kg bw (OECD 401)
Acute dermal toxicity:	LD50: > 2000 mg/kg bw	LD50: > 5000 mg/kg bw (OECD 402)
Acute inhalation toxicity:	No data, low vapour pressure, no exposure	LC50: > 88.8 mg/l (no guideline followed)

LOCAL EFFECTS

Skin irritation:	Not irritating (OECD 404)	Not irritating (OECD 404)
Eye irritation:	Irritating (OECD 405)	Irritating (OECD 405)
Skin sensitization:	Not sensitizing (OECD 429)	Not sensitizing (OECD 429, with magnesium nitrate, nitric acid ammonium calcium salt, sodium nitrate)

OTHER

Sub-acute toxicity:	Oral 28-day NOAEL \geq 1000 mg/kg bw/day (OECD 422)	Oral 28-day NOAEL \geq 1500 mg/kg bw/day (OECD 422, with potassium nitrate)
		Oral 52-week NOAEL = 256 mg/kg bw/day (OECD 453, with ammonium sulfate)
		Inhalation 2-weeks NOAEL \geq 185 mg/m ³ (OECD 412)
Mutagenicity:	Negative (OECD 471)	Negative (OECD 471, 473, with nitric acid ammonium calcium salt)
	Negative (OECD 473)	Negative (OECD 476, with potassium nitrate)
	Negative (OECD 476)	
Reproductive toxicity:	Oral 28-day NOAEL \geq 1500 mg/kg bw/day (OECD 422)	Oral 28-day NOAEL \geq 1500 mg/kg bw/day (OECD 422, with potassium nitrate)
Carcinogenicity:	No data	Not carcinogenic (OECD 453, with ammonium sulfate)

11.2. Information on other hazards

Does not contain substances included in the list established in accordance with Article 59(1) for having endocrine disrupting properties or identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

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SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

There no available ecotoxicological studies for the mixture as such. The data were based on studies of similar

Substances.	Calcium Nitrate	Amonium nitrate
Fish (short-term):	96-h LC50: 1378 mg/l (OECD 203)	48-h LC50: 447 mg/l (no guideline followed)
Fish (long-term):	No data	No data
Daphnia magna (short-term):	48-h EC50: 490 mg/l	48-h EC50: 490 mg/l (no guideline followed, with potassium nitrate)
Daphnia magna (long-term):	No data	No data
Algae:	10-d EC50: > 1700 mg/l (seawater)	10-d EC50: > 1700 mg/l (seawater, no with guideline followed, performed potassium nitrate)
Inhibition of microbial activity:	3-h EC50: >1000 mg/l, NOEC: 180 mg/l (OECD 209)	3-h EC50: >1000 mg/l, NOEC: 180 mg/l (OECD 209, with sodium nitrate)

12.2 Persistence and degradability

Biodegradation:

Standard test is not applicable as the mixture is an inorganic. In addition, biodegradation of nitrate can occur under anaerobic conditions, both under natural conditions and as a controlled process in many wastewater treatment plants, resulting in degradation products like nitrite, oxide of nitrogen, nitrogen, or ammonia. Nitrate degradation is fastest in anaerobic conditions. In the anaerobic transformation of nitrate into N₂, N₂O and NH₃, the biodegradation rate in wastewater plant at 20°C is 70 g N/kg dissolved solid/day.

Hydrolysis:

No hydrolysable group is present, will completely dissociate into ions.

12.3 Bioaccumulative potential

Octanol-water partition coefficient (K_{ow}): Not relevant as the substance is inorganic, but considered to be low based on high water solubility)

Bioconcentration factor (BCF): Low potential for bioaccumulation (based on ingredients properties).

12.4 Mobility in soil

Adsorption coefficient:

Low potential for adsorption (based on ingredients properties).

12.5 Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No 1907/2006, no PBT and vPvB assessment has been conducted since mixture is inorganic.

12.6 Endocrine disrupting properties

Does not contain substances included in the list established in accordance with Article 59(1) for having endocrine disrupting properties or identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7 Other adverse effectsno data available.

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SECTION 13. DISPOSAL CONSIDERATIONS

Packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

Waste Removal: Apply as fertilizer or transfer for disposal.

Disposing of the packaging: Empty containers contain residue of material on the inner surfaces. Thoroughly empty containers to be transmitted to authorized waste collector

Empty packaging completely.

Prevent pollution of surface waters.

Prohibition: Do not dispose of untreated packing with ordinary industrial wastes.

SECTION 14. TRANSPORT INFORMATION

ADR/RID/AND/IMDG/ICAO

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not applicable
14.3	Transport hazard class(es)	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not applicable
14.6	Special precautions for user	Not applicable
14.7	Maritime transport in bulk according to IMO instruments	Not applicable

SECTION 15. REGULATORY INFORMATION

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

REACH – Restriction on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII)	Conditions of restriction for the following entries should be considered: Number on list 58
REACH- Candidate List of Substances of Very High Concern for Authorisation (Article 59)	Not applicable
REACH – list of substances subject to authorisation (Annex XIV)	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants	Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	Not applicable
Sevesco III: Directive 2012/18/EU of the European Parliament and the Council on the control of major-accident hazards involving dangerous substances	Not applicable

1. REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH),

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establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC with amendments

2. COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No

1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

3. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006; with amendments

4. Regulation (EU) No 649/2012 Of The European Parliament and of The Council of 4 July 2012 concerning the export and import of hazardous chemicals.

5. Regulation (EC) No 850/2004 Of The European Parliament and of The Council Of 29 April 2004 On Persistent Organic Pollutants And Amending Directive 79/117/EEC. 6. European Agreement Concerning The International Carriage Of Dangerous Goods By Road (ADR) 7. REGULATION (EU) 2019/1148 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 June 2019 on the marketing and use of explosives precursors, amending Regulation (EC) No 1907/2006 and repealing Regulation (EU) No 98/2013

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances

and

thefts should be reported to the relevant national contact point. Please see https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/crisis-and-terrorism/explosives/explosives-precursors/docs/list_of_competent_authorities_and_national_contact_points_en.pdf.

15.2. Chemical Safety Assessment

The chemical safety assessment was not carried out (not required for mixture).

SECTION 16. OTHER INFORMATION

Other information:

Classification of mixture was carried on based on ingredients of the mixture (Additivity formula)

Abbreviations:

Acute Tox 4 – acute toxicity category 4

Eye Dem 1 - Serious eye damage category 1

Ox. Solid – Oxidizing solid

H272 – May intensify fire; oxidizer.

Eye Irrit. 2 – eye irritation, category 2

H319 – Causes serious eye irritation.

NOAEL: No Observed Adverse Effect Level

NOEC: No observed effect concentration.

LD50: Lethal Dose 50%. The LD50 corresponds to the dose of a tested substance causing 50% lethality during a specified time interval.

LC50: Lethal Concentration 50%. The LC50 corresponds to the concentration of a tested substance causing 50% lethality during a specified time interval.

EC50: Effective Concentration 50%. The EC50 corresponds to the concentration of a tested substance causing 50% changes in response (e.g. on growth) during a specified time interval.

BCF: Bioconcentration factor

PBT: Persistent, bioaccumulative and toxic

vPvB: Very Persistent and very Bioaccumulative

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Indication of changes:

Section 1.2 – conversion from PPC ADOB PPC ADOB Sp. z o.o.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. PPC ADOB and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.