

all in one XLM12 Fertilizer Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II / Regulation (EU) No. 453/2010

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

1.1 Product identifier

Product name:	Flower Power fertilizers XLM12
EC number:	233-826-7
REACH Registration number:	01-2119491164-38
CAS number:	13446-18-9
Product type:	Solid (Crystalline)
Other means of identification:	magnesium nitrate
Chemical formula:	Mg(NO ₃) ₂ ·6H ₂ O

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

IDENTIFIED USES

Industrial distribution.
Industrial USE to formulate chemical product mixtures.
Professional formulation of fertiliser products.
Professional USE as fertiliser at Farm - loading and spreading (includes soil conditioning).
Professional USE as fertiliser in Greenhouse (e.g. Fertigation, includes pH control of fertiliser solution with acid).
Professional USE as liquid fertiliser in open field (e.g. Fertigation).
Professional USE as fertiliser - maintenance of equipment.

USES ADVISED AGAINST

None identified.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification Manufacturer / Supplier:	flowerpowerfertilizers.com Postbus 213 1000 AE Amsterdam The Netherlands E: info@flowerpowerfertilizers.com
--	---

Emergency telephone number:	0031 30 274 88 88 (24h – only for medical professionals)
------------------------------------	--

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition: Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification: **Not classified.**

Classification according to Directive 67/548/EEC [DSD]

Classification: **Not classified.**

See Section 16 for the full text of the R phrases or H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word: No signal word.

Precautionary statements

Prevention: **Not applicable.**
Response: **Not applicable.**
Storage: **Not applicable.**
Disposal: **Not applicable.**
Supplemental label elements: Not applicable.

EU Regulation (EC) No.: Not applicable.
1907/2006 (REACH) Annex XVII
-Restrictions on the manufacture,
placing on the market and use of
certain dangerous substances,
mixtures and articles

Special packaging requirements

Containers to be fitted with: Not applicable.
child-resistant fastenings

Tactile warning of danger: Not applicable.
for vPvB according to Regulation
(EC) No. 1907/2006, Annex XIII

Other hazards which do not: Product forms slippery surface when combined with water.
result in classification

SECTION 3: Composition/information on ingredients

Substance/mixture: Mono-constituent substance

Ingredient name	Identifiers	%	Classification		Type
magnesium nitrate	RRN: 01-2119491164-38 EC: 233-826-7 CAS : 13446-18-9	>=90 - <100	67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	[A]
			O; R8		

Type

[A] Constituent

[B] Impurity

[C] Stabilizing additive

See Section 16 for the full text of the R phrases or H statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact:

No signal word.

Precautionary statements

Prevention:

Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation:

If inhaled, remove to fresh air. Get medical attention if you feel unwell.

Skin contact:

Wash with soap and water. Get medical attention if irritation develops.

Ingestion:

Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.

Protection of first-aiders:

No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact:

No known significant effects or critical hazards.

Inhalation:

Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact:

No known significant effects or critical hazards.

Ingestion:

No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact:	No specific data.
Inhalation:	No specific data.
Skin contact:	No specific data.
Ingestion:	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments:	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:	Use flooding quantities of water for extinction.
Unsuitable extinguishing media:	Do NOT use chemical extinguisher or foam or attempt to smother the fire with steam or sand.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture:	No specific fire or explosion hazard.
Hazardous thermal decomposition products:	Avoid breathing dusts, vapors or fumes from burning materials. In case of inhalation of decomposition products in a fire, symptoms may be delayed.
Remark:	Non-flammable substance.

5.3 Advice for firefighters

Special precautions for fire-fighters:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Additional information:	Not available.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders:

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill:

Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill:

Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures:

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Recommendations:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Keep away from: organic materials, oil and grease.

7.3 Specific end use(s)

Recommendations:

Not applicable.

Industrial sector specific solutions:

Not applicable.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures:

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product / ingredient name	Type	Exposure	Value	Population	
magnesium nitrate	DNEL	Long term Dermal	20.8 mg/kg bw/day	Workers	Systemic
magnesium nitrate	DNEL	Long term Inhalation	36.7 mg/m ³	Workers	Systemic

PNECs

Product / ingredient name	Type	Compartment Detail	Value	Method Detail
magnesium nitrate	PNEC	Fresh water	0.45 mg/l	Assessment Factors
magnesium nitrate	PNEC	Marine	0.045 mg/l	Assessment Factors
magnesium nitrate	PNEC	Intermittent release.	4.5 mg/l	Assessment Factors
magnesium nitrate	PNEC	Sewage Treatment Plant	18 mg/l	Assessment Factors

8.2 Exposure controls

Appropriate engineering controls:

No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Individual protection measures

Hygiene measures:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. A washing facility or water for eye and skin cleaning purposes should be present.

Eye/face protection:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other skin protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection:

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	Solid (Crystalline)
Color:	White.
Color:	Odorless.
Odor threshold:	Not determined
pH:	Not determined
Melting point/freezing point:	95 °C
Initial boiling point and boiling range:	Not determine
Flash point:	Not determine
Evaporation rate:	Not determine
Flammability (solid, gas):	Not determine
Burning time:	Not determine
Burning rate:	Not determine
Upper/lower flammability or explosive limits:	Lower: Not determined Upper: Not determined
Vapor pressure:	< 0.0000001 hPa @ 20 °C
Vapor density:	Not determine
Relative density:	1.46 @ 20 °C
Bulk density:	Not determined
Solubility(ies):	Easily soluble in the following materials: cold water
Water solubility:	> 100 g/l @ 20 °C
Partition coefficient: n-octanol/water: octanol/water	Not determined
Auto-ignition temperature:	Not determined
Viscosity:	Dynamic: Not determined Kinematic: Not determined
Explosive properties:	None
Oxidizing properties	None

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Avoid contamination by any source including metals, dust and organic materials.

10.5 Incompatible materials

alkalis combustible materials reducing materials organic materials acids

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product / ingredient name	Result	Species	Dose	Method Detail	References
magnesium nitrate					
	LD50 Oral	Rat	> 2,000 mg/kg 423 Acute Oral toxicity - Acute Toxic Class Method	-	
	LD50 Dermal	Rat.	> 5,000 mg/kg OECD 402	-	

Conclusion/Summary: Irritation/Corrosion

No known significant effects or critical hazards.

Conclusion/Summary Skin:

No known significant effects or critical hazards.

Eyes:

Non-irritating

Respiratory:

No known significant effects or critical hazards.

Sensitization

Product / ingredient name	Route of exposure	Species	Result	References
magnesium nitrate	Skin	Mouse	Not sensitizing 429 Skin Sensitization: Local Lymph Node Assay	-

Conclusion/Summary

Skin:

Not sensitizing

Respiratory:

No known significant effects or critical hazards.

Mutagenicity

Product / ingredient name	Test	Experiment	Result	References
magnesium nitrate	OECD 476	In vitro; Mammalian-Animal	Negative	

Conclusion/Summary: No mutagenic effect.

Carcinogenicity

Conclusion/Summary No carcinogenic effect.

Reproductive toxicity

Product / ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
magnesium nitrate	-	Negative	Negative	Rat	Oral : > 1500 mg/kg OECD 422	28 days	

Conclusion/Summary: No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary No known significant effects or critical hazards.

Information on the likely routes of exposure No known significant effects or critical hazards.

Potential acute health effects

Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion: No known significant effects or critical hazards.

Skin contact: No known significant effects or critical hazards.

Eye contact: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No specific data.

Ingestion: No specific data.

Skin contact: No specific data.

Eye contact: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Adverse health effects are considered unlikely, when the product is used according to directions.

Potential delayed effects None identified.

Long term exposure

Potential immediate effects:

Adverse health effects are considered unlikely, when the product is used according to directions.

Potential delayed effects

None identified.

Potential chronic health effects

Product / ingredient name	Result	Species	Dose	Exposure	References
magnesium nitrate	Sub-acute	Rat	> 1500 mg/kg	28 days	
	NOAEL Oral		OECD 422		

Conclusion/Summary:

Not toxic.

General:

No known significant effects or critical hazards.

Carcinogenicity:

No known significant effects or critical hazards.

Mutagenicity:

No known significant effects or critical hazards.

Teratogenicity:

No known significant effects or critical hazards.

Developmental effects:

No known significant effects or critical hazards.

Fertility effects:

No known significant effects or critical hazards.

Toxicokinetics

Absorption:

Rapidly absorbed.

Distribution:

Enters the systemic circulation without passing through liver tissues.

Metabolism:

Metabolized to the following: NO₃⁻ Mg²⁺.

Elimination:

Excreted via the urine. The chemical and its metabolites are fully excreted and do not accumulate within the body.

SECTION 12: Ecological information

12.1 Toxicity

Product / ingredient name	Result	Species	Exposure	References
magnesium nitrate				
	Acute LC50 1,378 mg/l Fresh water OECD 203	Fish - Fish.	96 h	
	Acute EC50 490 mg/l Fresh water	Aquatic invertebrates. Daphnia	48 h	
	Acute LC50 > 1,700 mg/l Fresh water	Aquatic plants - Algae	240 h	

Conclusion/Summary: The product does not show any bioaccumulation phenomena. The product is not expected to harm the environment when used properly according to directions.

12.2 Persistence and degradability

Conclusion/Summary: Readily biodegradable in plants and soils.

12.3 Bioaccumulative potential

Conclusion/Summary: No known significant effects or critical hazards.

12.4 Mobility in soil

Soil/water partition coefficient (KOC): Not available.

Mobility: This product may move with surface or groundwater flows because its water solubility is: high

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste: Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

European waste catalogue (EWC)

Waste code	Waste designation
06 03 14	solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

Packaging

Methods of disposal:

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. Empty the bag by shaking to remove as much as possible of its contents. Empty bags may be disposed of as non-hazardous material or returned for recycling.

Special precautions:

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulation: ADR/RID	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information	ADR/RID

Regulation: ADN	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information: <u>Marine pollutant:</u>	ADN NO.

Regulation: IMDG	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information: <u>Marine pollutant:</u>	IMDG NO.

Regulation: IATA	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information: Marine pollutant:	IATA NO.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

14.8 IMSBC

Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorization Substances of very high concern

Not applicable.

Other EU regulations

Europe inventory: All components are listed or exempted.

Seveso II Directive

This product is not controlled under the Seveso II Directive.

National regulations

Notes: To our knowledge no other country or state specific regulations are applicable.

15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Abbreviations and acronyms:

ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DNEL = Derived No Effect Level DMEL = Derived Minimal Effect Level
EUH statement = CLP-specific Hazard statement PNEC = Predicted No Effect Concentration RRN = REACH Registration Number
PBT = Persistent, Bioaccumulative and Toxic vPvB = Very Persistent and Very Bioaccumulative bw = Body weight

Key literature references and sources for data:

EU REACH IUCLID5 CSR.
National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances.
IHS, 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.Regulation (EC) No 1272/2008 Annex VI.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	Calculation method

Full text of abbreviated H statements:

H272 May intensify fire; oxidizer.

Full text of classifications [CLP/GHS]:

Ox. Sol. 3, H272: OXIDIZING SOLIDS - Category 3

Full text of abbreviated R phrases:

R8- Contact with combustible material may cause fire.

Full text of classifications [DSD/DPD]:

O - Oxidizing

Date of printing:

15.09.2014

Date of issue/ Date of revision:

17.12.2013

Date of previous issue:

23.05.2012

Version:

2.0

Prepared by:

Yara Product Classifications & Regulations.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein, since all materials may represent unknown hazards and should be used with caution. Final determination of the suitability of any material is the sole responsibility of the user.