Safety Data Sheet

Reg.: (EC) No 1907/2006 (REACH), (EU) No 453/2010, (EU) No 830/2015, (EU) No 542/2017, (EU) No 878/2020, (EC) No 1272/2008, (EC) No 790/2009, (EC) No 286/2011

KAVALA SOLUTIONS

Version: 1.0 *Revision date: ---*

Date of issue: 09/01/2025

CAN 27-0-0+5MgO+0,2B

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

1.1 Product identifier

Commercial Product Name : CAN 27-0-0+5MgO+0,2B

Unique Formula Identifier (UFI) : HV00-A06Y-F00Q-FTAW

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

Use of the Substance/Mixture : Fertiliser and professional formulation of fertiliser products.

Uses advised against : All other uses.

1.3 Details of the supplier of the safety data sheet

Company (Producer) : KAVALA SOLUTIONS LTD
10th km. of the Kavala - Xanthi highway
64006 Nea Karvali
Headquarters Address: Pentelis 34A
17564,Palaio Faliro, Attiki, Greece
e-mail: info@kavalasolutions.com

Telephone : +30 2511830000

1.4 Emergency telephone number

In case of medical emergencies, please contact your local poison control center.
Company's Telephone: +30 2510 317127 and +30 2130 037616 (08:30 to 16:30)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) - CLP

Eye Irrit. 2 H319: Causes serious eye irritation.

2.2 Label elements CLP

Hazard pictograms:

GHS07

Signal word

Warning

Hazard Statements:

H319 Causes serious eye irritation.

Precautionary Statements:

General: ---

Prevention: P264: Wash … thoroughly after handling.

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

Response: 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

Storage: ---

Disposal: ---

Hazardous components which must be listed on the label:

- Ammonium nitrate

2.3 Other hazards

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Classified components according to EU Chemicals Legislation:

Chemical name	CAS No EINECS No Registration No	Classification (1272/2008/EC)	Concentration [%]
Ammonium nitrate	6484-52-2 229-347-8 01-2119490981-27-XXXX	Ox. Sol. 2, H272 Eye Irrit. 2, H319	70 - 78 %
Magnesium Nitrate	10377-60-3 233-826-7 01-2119491164-38-XXXX	Ox. Sol. 3, H272 Eye Irrit. 2, H319	< 2 %

Further information

The components in this formulation do not meet the criteria for classification according to Regulation (EC)No. 1907/2006 as PBT or vPvB.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Take off contaminated clothing and shoes immediately.

If inhaled : Avoid dust formation during use.
Inhalation of dust may cause irritation of the respiratory system.
In case of respiratory tract irritation, consult a physician.

In case of skin contact : After contact with skin, first remove product with a dry cloth and then wash the skin with plenty of water.
Take off immediately all contaminated clothing and wash it before reuse.

In case of eye contact : In case of contact with eyes, rinse immediately with plenty

of flowing water for 10 to 15 minutes holding eyelids open.

In case of swallowing : Typically no exposure pathway.
If accidentally swallowed, rinse the mouth with plenty of water (only if the person is conscious) and ask immediately for medical help.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms upon:

- **Inhalation:** Cough, Headache, Sore throat
- **Skin contact:** Not a skin irritant
- **Eye contact:** Causes serious eye irritation.
- **Ingestion:** Abdominal pain, Convulsions, Diarrhoea, Dizziness, Vomiting, Weakness

4.3 Indication of any immediate medical attention and special treatment needed

Provide symptomatic treatment.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Water, water spray.

Unsuitable extinguishing media : Powder, foam or CO_2.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : In case of a fire or decomposition involving various nitrogen-based fertilizers, hazardous decomposition products will be formed, such as: irritating, corrosive and/or toxic gases. Exposure to decomposition products may cause serious damage to health.
No action shall be taken involving any personal risk or without suitable training. Keep away all personnel not involved in firefighting team.
Approach the fire from upwind to avoid exposure to toxic fumes.
If it is possible, move the product containers from the fire area without risk. Use self-contained breathing apparatus when entering fumes.
For cooling of packages that are close to the fire area use: water spray.

5.3 Advice for firefighters

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 incidents with chemical substances.

Further information : Attention! The product contains oxidizing agent at a rate below the classification limit (see section 3), which may intensify fire.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local authority requirements.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

See protective measures under point 7 and 8.

Avoid inhalation of dust. Ensure sufficient ventilation especially in enclosed spaces.

Eliminate all ignition sources. Keep all unnecessary personnel away. Wear gloves and overalls. Do not touch or walk through spilt material.

6.2 Environmental precautions

Heavy spillage may cause adverse environmental impact in surface waters, such as eutrophication or contamination by nitrates. In case of contamination of rivers and lakes or drains, inform respective authorities.
Create mounds with suitable materials e.g. sand, to prevent molten ammonium nitrate from entering the drains.

6.3 Methods and material for containment and cleaning up

If it is possible stop leak of the product without risk. Keep combustibles (wood, paper, oil, etc.) away from spilled material.
During cleanup, you should wear appropriate PPE, to prevent any skin/eye contact and inhalation of dust.
Avoid creating dust during clean-up. Do not use compressed air to clean up spills.
Environmental manager must be informed immediately of all major spillages. Collect the uncontaminated dispersed product with a clean shovel and place the material into a clean, dry container/bag for re-use, ONLY if it is not contaminated by substances such as organic materials, metal powders, compounds containing chlorine and alkalis which may reduce the resistance of AN to explosion. Otherwise, carry out a risk assessment, as the risk depends on the nature and quantity of the contaminant.
Products which are out-of-specification or contaminated by incompatible materials (see 10.5), should be disposed of as hazardous waste according to national regulations.

6.4 Reference to other sections

Refer to section: 7, 8, 11, 12 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid eye and excessive skin contact. Use only with adequate ventilation. Wear personal protection equipment (Refer to section 8). Do not eat, drink or smoke when handling. Wash hands after handling.
Advice on protection against fire and explosion	:	Keep away from heat and sources of ignition - No smoking. The risk of fire (or decomposition) can increase particularly if the product is spilled and contaminated with combustible materials such as coal, grain, sawdust, oil, grease or elemental sulphur.
Dust explosion class	:	Not applicable.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store in accordance with local regulations. Store away from combustible materials. Handle bags with care. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10).

Doors of the warehouse should be kept closed unless for intake or outtake of product. Doors should be tight and other openings closed.

Keep floors clean and dry. If spillage, sweep and clean immediately. Do not mix moist product (e.g. after spillage) into dry product.
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.

Advice on common storage : Separate from reducing agents, combustible or flammable materials.
During storage the product must be protected from water and atmospheric humidity (rain, humid air, snow) at any time. Product that is damaged by humidity or water will form solid lumps, larger quantities can become very hard and granules transformed to powder.

Product should be covered with polyethylene foil or similar during storage at any time unless for filling or emptying. The overlapping of the foils should be at least 0,5m. The foils should be fastened with sticks to prevent them sliding off. Do not expose the product to air more than necessary. Recover immediately when the operation is completed.

Blends of Urea and ammonium nitrate containing products, such as CAN, are prohibited. Even traces of Urea left on the floor and mixed with CAN will soon form a solution when exposed to air.
Keep away from food, drink and animal feedingstuffs.

Storage Temperature : Ambient temperature (5 - 30°C).

Other data : The product is hygroscopic.

7.3 Specific end use(s)

Fertilizer.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredients with exposure limit values that require monitoring at the workplace:
Not required.

· **DNEL/DMEL (**for Chemical substance : **Ammonium nitrate)**
WORKERS EXPOSURE:
Long term exposure, DNEL inhalation route (systemic effects): 37,6 mg/m3
Long term exposure, DNEL dermal route (systemic effects): 21,3 mg/kg/day
Long term, DNEL oral route (systemic effects): not applicable
CONSUMERS EXPOSURE:
Long term, DNEL inhalation route (systemic effects): 11,1 mg/m3
Long term, DNEL dermal route (systemic effects): 12,8 mg/kg/day
Long term, DNEL oral route (systemic effects): 12,8 mg/kg/day

· **PNECs (**for Chemical substance : **Ammonium nitrate)**
PNEC aqua (freshwater): 0,45 mg/L

PNEC aqua (marine water): 0,045 mg/L
PNEC aqua (intermittent releases): 4,5 mg/L
PNEC sediment (freshwater):: No or insufficient data available at present
PNEC sediment (marine water): No or insufficient data available at present
PNEC soil: No or insufficient data available at present
PNEC STP: 18 mg/L

· **DNEL/DMEL (**for Chemical substance : **Magnesium nitrate)**
WORKERS EXPOSURE:
Long term exposure, DNEL inhalation route (systemic effects): 20,8 mg/m3
Long term exposure, DNEL dermal route (systemic effects): 36,7 mg/kg/day

· **PNECs (**for Chemical substance : **Magnesium nitrate)**
PNEC aqua (freshwater): 0,45 mg/L
PNEC aqua (marine water): 0,045 mg/L
PNEC aqua (intermittent releases): 4,5 mg/L
PNEC Sewage Treatment Plant (STP): 18 mg/L

8.2 Exposure controls

Appropriate engineering controls

Prevent generation of dust. Provide adequate ventilation in work and storage areas.

Personal protective equipment

Respiratory protection	:	Special respiratory protection measures are not required when applied under normal or reasonably foreseeable conditions of use and in a well ventilated area. In case of inadequate ventilation and/or dust formation wear respiratory protection. Recommended: half-mask for dust/particles (EN 149) or half-mask (EN 140) with filter type P1 or FFP1 for dust (EN 143).
Hand protection		
Material	:	Impervious chemical resistant protective gloves (EN 374, EN 420) and gloves for protection from mechanical risks (EN 388).
Glove thickness	:	---
Break through time	:	---
General remarks	:	Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Eye/face protection	:	In case of splash risk. wear safety glasses with side-shields conforming to EN166.
Skin and body protection	:	Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Recommended protection measures which should be taken into account, when handling chemicals: • General practical hygiene measures. • Do not breathe vapour /cloud /gas /dust. • When using do not eat, drink or smoke. • Wash hands before breaks and at the end of work. • Avoid contact with skin, eyes and clothing. Take off contaminated clothing and wash before reuse.

Environmental exposure controls

General advice	:	Do not dispose into surface water or sanitary sewer system. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Prevent further leakage or spillage if possible without risk. If the product contaminates rivers and lakes, inform respective authorities.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	: Solid
Colour	: White
Odour	: Characteristic
Flash point	: The product itself is not flammable
Lower Flammable Limit	: Not applicable
Upper Flammable Limit	: Not applicable
Autoignition temperature	: The product is not self-ignited
Explosive properties	: There is no risk of explosion of the product
Lower explosive limit	: Not applicable
Upper explosive limit	: Not applicable
pH (20 °C)	: 4 - 5
Melting point / melting range (°C)	: No data available
Boiling point/boiling range (°C)	: Not applicable
Vapour pressure	: Not applicable
Density	: No data available
Bulk density	: 1,0 – 1,2 kg/cm^3
Solubility in water	: Partially soluble in water
Partition coefficient n-octanol/water:	: No data available.
Viscosity, dynamic	: Not applicable
Viscosity, kinematic	: Not applicable
Oxidising properties	: The product contains oxidizing agent at concentration >10% (see section 3) which may intensify fire.

9.2 Other information

Ammonium nitrate based fertilizers shall be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, Part III, Section 39 (see section 14).

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
Ammonium nitrate reacts with combustible substances, organic substances, fine metallic powders and reducing agents.

10.2 Chemical stability
The material is stable under normal conditions of use and storage and will not decompose spontaneously. Though, may decompose when heated. The risk of decomposition dependents upon the temperature of the heat source, the duration of exposure to the heat source and the containment of the fertilizer.

10.3 Possibility of hazardous reactions
If heated at very high temperatures over 170°C, ammonium nitrate may cause an explosion at any moment, especially if contaminated with combustible substances, organic substances, coal, oil, or if confined in closed spaces (pipes, containers, tankers with metallic walls).
The product is prone to chemical self-ignition when it comes into contact with readily oxidizing organic substances, finely divided metals, superphosphates.

10.4 Conditions to avoid
The product decomposes when heated. Avoid confined spaces.

10.5 Incompatible materials
Reducing agents, strong acids and bases, urea, metallic powders, combustible materials, chromates, zinc, copper and its alloys, chlorates.

10.6 Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products will not be produced.
May decompose when heated. Decomposition may release: potassium nitrite, oxygen, nitrogen oxides (NO, NO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Dangerous health implications
In case of exposure that is repetitive, prolonged or at concentrations higher than recommended by the occupational exposure limits (see section 8), it may result in adverse effects on health depending on the means of exposure.

11.1.1. Ingestion:
Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for ingestion (see section 3).

11.1.2. Inhalation:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation (see section 3).

11.1.3. Contact with the skin and the eyes:
Causes serious eye irritation. (see section 3).

11.1.4. CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned (see section 3).

11.1.5. Respiratory or skin sensitisation:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous with sensibilizing effects (see section 3).

11.1.6. Specific target organ toxicity (STOT)-single exposure:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for inhalation. (see section 3).

11.1.7. Specific target organ toxicity (STOT)-repeated exposure:
Based on available data, the classification criteria are not met, as it does not contain substances classified, as dangerous for inhalation (see section 3).

11.1.8. Aspiration hazard:
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for this effect (see section 3).

Given the available data of the individual components

Acute toxicity (oral)

Ammonium nitrate	:	LD50 (oral-rat): 2.950 mg/kg (OECD 401)
Magnesium nitrate	:	LD50 (oral-rat)> 2.000 mg/kg (OECD 423)

Acute toxicity (inhalant)

Ammonium nitrate	:	LC50/4 hours (inhalation-rat): 88,8 mg/L LD50 (static) (freshwater fish) 447 mg/L
Magnesium nitrate	:	No data available

Acute toxicity (dermal)

Ammonium nitrate	:	LD50 (dermal-rat): > 5.000 mg/kg (OECD 402)
Magnesium nitrate	:	LD50 (dermal-rat): > 5.000 mg/kg (OECD 402)

Acute toxicity (other routes of administration)

Ammonium nitrate	:	No data available
Magnesium nitrate	:	No data available

Skin corrosion/irritation

Skin irritation

Ammonium nitrate	:	Does not cause skin irritation
Magnesium nitrate	:	Does not cause skin irritation

Serious eye damage/eye irritation

Ammonium nitrate	:	Causes eye irritation
Magnesium nitrate	:	Causes eye irritation

Respiratory or skin sensitization

Ammonium nitrate	:	Does not cause any sensitization
Magnesium nitrate	:	Does not cause any sensitization

CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction)
Based on available data, the classification criteria are not met, as it does not contain substances classified as dangerous for the effects mentioned (see section 3).

STOT - single exposure

Ammonium nitrate	:	Not classified
Magnesium Oxide	:	Not classified

STOT - repeated exposure

Ammonium nitrate	:	Not classified
Magnesium nitrate	:	Not classified

Aspiration hazard

Aspiration toxicity

Ammonium nitrate	:	There are no harmful effects or critical hazards

Magnesium nitrate : There are no harmful effects or critical hazards

Neurological effects

Ammonium nitrate : There are no harmful effects or critical hazards
Magnesium nitrate : There are no harmful effects or critical hazards

Toxicology Assessment

Toxicology, Metabolism, Distribution
With proper handling the product does not cause any damage to health
Acute effects
With proper handling the product does not cause any damage to health

Further information

No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to the aquatic environment

Ammonium nitrate : Hazardous to the aquatic environment - Class 1 (list assessment): slightly hazardous.
It must not penetrate groundwater, discharge into the aquatic environment or sewage undiluted or in relatively large quantities.

Magnesium nitrate : No data available

Toxicity to daphnia and other aquatic invertebrates

Ammonium nitrate : EC50 (Daphnia) magna: 490 mg/kg
Magnesium nitrate : No data available

Toxicity to algae:

Ammonium nitrate : LC50: 1.700 mg/l
Magnesium nitrate : No data available

12.2 Persistence and degradability

Biodegradability : No data available

12.3 Bioaccumulative potential

Bioaccumulation : Low

12.4 Mobility in soil

Surface tension : No data available

12.5 Results of PBT and vPvB assessment

The product does not meet the criteria for classification as PBT or vPvB.

12.6 Other adverse effects

Additional ecological information : Prevent surface and ground-water infiltration, as well as ground penetration.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Advice on disposal and packaging : Disposal:
According to National and European regulations. It should not be disposed of with household wastes. The appropriate waste code(s) should be assigned by the user, based on the product usage.

The following Waste Codes are only suggestions:

Waste Code (EWC) : EWC disposal code no. (unused product):
06 10 02 wastes containing dangerous substances
(M) = Mirror entry

Disposal of uncleaned packaging (EWC) : EWC disposal code no. (uncleaned packaging):
15 01 10*(M) packaging containing residues of or contaminated by dangerous substances
(M) = Mirror entry
Note: After rinsing with plenty of water, empty bags can be transported to licensed units / management organizations for recycling.

SECTION 14: TRANSPORT INFORMATION

The product is not subject to international regulations governing the transport of dangerous goods (ADR/RID, IMDG, ICAO/IATA).

Recommendation on transportation : During transportation the product must be protected from water and atmospheric humidity (rain, humid air, snow) at any time. Product that is damaged by humidity or water will form solid lumps, larger quantities can become very hard and granules transformed to powder.

Loading and unloading of the product should only be carried out under dry weather conditions. Do not discharge when there is precipitation or heavy fog. Transport facilities must be dry and clean. The product should be covered during transport.

SECTION 15: REGULATORY INFORMATION

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

Restrictions on use : Regulation (EC) No. 1907/2006 (REACH), Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Applicable table 58

Regulation (EC) No. 1907/2006 (REACH), Annex XIV – List of substances subject to authorization : Not applicable.

VOC (1999/13/EC) : Not applicable.

Seveso III - DIRECTIVE : Not applicable

2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the control of major-accident hazards involving dangerous substances

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors : Acquisition, introduction, possession or use of this product by the general public is restricted by Regulation (EU) 2019/1148. All suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point (Hellenic Police, Tel: +302106914916, email: dka_opla@police.gr).

15.2 Chemical safety assessment

Chemical safety assessments for substances in this preparation were carried out.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H272: May intensify fire; oxidiser.
H319: Causes serious eye irritation.

Revised points:

Acronyms and abbreviations

ADR:	European **A**greement concerning the International Carriage of **D**angerous Goods by **R**oad (2015)
CAS No:	**C**hemical **A**bstracts **S**ervice Number
EmS:	**Em**ergency **S**chedules
EINECS No:	**E**uropean **I**nventory of **E**xisting **C**ommercial **C**hemical **S**ubstances Number
GHS:	**G**lobally **H**armonized **S**ystem of Classification and Labelling of Chemicals
IATA-DGR:	**I**nternational **A**ir **T**ransport **A**ssociation's-**D**angerous **G**oods **R**egulations (56th edition)
ICAO-TI:	**I**nternational **C**ivil **A**viation **O**rganization's-**T**echnical **I**nstructions
IMDG Code:	**I**nternational **M**aritime **D**angerous **G**oods Code (36th - 37th amendment)
RID:	**R**egulations Concerning the **I**nternational Transport of Dangerous Goods by **R**ail

This Safety Data Sheet was elaborated on the basis of information provided by the manufacturer, as well as, suppliers of individual components and on the basis of data in publicly accessible databases.
All information provided herein is deemed reliable and is intended to ensure optimal protection during transport, handling and storage of our products.
However, the present should not be considered as a warranty or quality specification.

Department issuing MSDS:
KAVALA SOLUTIONS LTD
Pentelis 34A, 175 64, Palaio Faliro, Attiki, Greece

For information contact :
KAVALA SOLUTIONS LTD
Pentelis 34A, 175 64, Palaio Faliro, Attiki, Greece
Tel. : +30 2511830000
e-mail: info@kavalasolutions.com