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SAFETY DATA SHEET (SDS)

1. IDENTIFICATION

Product name	ALA GARDEN Farm 【Water Soluble】
Company	Seiwa Fertilizer Ind. Co.,Ltd.
Address	3-4, 4 Chome, Bingo Machi, Chuo-ku, Osaka City
Telephone	+81-6-6231-3771
FAX	+81-6-6231-1988
Emergency telephone number	+81-6-6231-3771
Office hour	Mon-Fri 9:00-17:00
Recommended uses and restrictions on use	Fertilizer

2. HAZARDS IDENTIFICATION

GHS classification of the substance or mixture

Physical hazards	Not classified
Health hazards	Not classified
Environmental hazards	Not classified

Label elements

Pictograms or hazard symbols	None
Signal word	None
Hazard statements	None
Precautionary statements (Prevention)	None
(Response)	None
(Storage)	None
(Disposal)	Observe all federal, state and local regulations when disposing of the substance and container.
Others	No information available
Other hazards	Irritation to eye, respiratory system, and skin

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance/mixture	Mixture
Chemical Name	Compound fertilizer

Chemical Name	ENCS No.	CAS RN	Percent
Ammonium Sulfate	1-400	7783-20-2	65% Max
Ammonium Dihydrogenphosphate	1-379	7722-76-1	15% Max
Potassium Sulfate	1-454	7778-80-5	19-21%
Citric Acid, Anhydrous	2-1318	77-92-9	10% Max

Components	ENCS No.	CAS RN	Guaranteed components(%)
Total nitrogen as N	not-disclosed	not-disclosed	14.0 %
Ammoniac nitrogen as N	not-disclosed	not-disclosed	14.0 %
Water Soluble phosphorus as P ₂ O ₅	not-disclosed	not-disclosed	6.0 %
Water soluble potassium as K ₂ O	not-disclosed	not-disclosed	10.0 %

4. FIRST-AID MEASURES

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice if needed.
Skin contact	Wash off immediately with soap and plenty of water. If skin irritation or rash occurs, get medical advice/attention.
Eye contact	Rinse cautiously with water for more than 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/ attention.
Ingestion	Rinse mouth with clean water and get medical attention. Do not force to vomit. If vomiting occurs, the head should be lowered to prevent vomiting from entering the lungs.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray, carbon dioxide gas, dry chemical, foam
Unsuitable extinguishing media	Straight stream water
Specific hazards arising from the chemical product	The product is hard to burn. Thermal decomposition can lead to release of ammonia gas, sulfur oxide.
Special extinguishing method	Fire-extinguishing work is done from the windward. Entry to non-involved personnel should be controlled around the area. Remove movable containers if safe to do so. Cool the container fully after extinguishing the fire.
Special protective actions for fire-fighters	Fire-extinguishing work is done from the windward and avoid inhaling harmful gases. Wear respiratory protection according to the situation.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See Section 8. Wear appropriate personal protective equipment to avoid adhering it on skin or in eyes, or inhaling dust.
Environmental precautions	Do not let product enter drains and water course. Do not discharge to the environment due to containing ingredients that cause eutrophication of the water system.
Methods and materials for contaminant and methods and materials for cleaning up	Sweep up or vacuum scattered particles in order to prevent the dispersion of dust, and collect them in an empty container. Keep it away from drains.

Secondary disaster prevention measures No information available

7. HANDLING AND STORAGE

Handling	Technical measures	See Section 8. Wear appropriate personal protective equipment. Use in a well-ventilated area. Use a ventilation, local exhaust according to the situation.
	Safety handling precautions	Keep out of contact with alkaline substances, oxidizing agents, and high temperature substances. Wash hands and face after handling. Prevent dispersion of dust. Be careful not to inhale or ingest dust. Take off contaminated clothes. Wash them before reusing. No smoking, or eating and drinking when handling. Use effective amount of the product as fertilizer, which is undiluted or diluted with an appropriate amount of water, according to the crop.
Storage	Storage conditions	Store away from sunlight, in a cool, dark, and dry place. Use a sealable container without damage and leakage. Keep container tightly closed. Leaving it open may cause consolidation due to moisture absorption. Moisture absorption may accelerate the decomposition and invalidation of components. Lighting and ventilation equipment necessary for storing or handling dangerous and harmful substances will be installed in the storage location.
	Incompatible substances	Oxidizing agents, reducing agents, alkaline substances, high temperature substances
	Safe packaging material	Sealable container without damage and leakage. Polyethylene, polypropylene.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters		Not set up
Exposure limits	Japan Society for Occupational Health (JSOH) (2022)	Dust Type 3 Other inorganic and organic acid Inhalable dust : 2mg/m ³ , Total dust : 8mg/m ³
Engineering controls		Install a closed system or local exhaust in the workplace where dust is generated. Implement regulatory management and equipment management to reduce exposure.
Personal protective equipment		
	Respiratory protection	Dust respirator
	Hand protection	Rubber or PVC protective gloves
	Eye protection	Protective glasses - with side plates, or goggles
	Skin and body protection	Protective long sleeve clothing, protective apron
	General hygiene considerations	Wash hands and face after handling. No smoking, or eating and drinking when handling. Take off contaminated clothes. Wash them before reusing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Physical state	Solid
	Form	Granular
	Color	Light beige or grayish white
Odour		Odorless
pH		3-3.5 (1% water solution)
Ignition point		None
Flammability		Nonflammable
Flammability or explosive limits		Min: None Max: None
Relative density		0.94—0.96
Solubilities	Water	Soluble
	Other solvents	No data available
Other physicochemical properties		No data available

10. STABILITY AND REACTIVITY

Reactivity, chemical stability	Stable under normal temperatures and pressures.
Possibility of hazardous reactions	Not reacted under normal handling conditions.
Conditions to avoid	Avoid contact with, mixing with, or storage close to water and incompatible materials. Avoid direct sunlight, and store in cool, dark, and dry place.
Incompatible materials	Oxidizing agents, reducing agents, alkaline substances, high temperature substances.
Hazardous decomposition products	Thermal decomposition can lead to release of ammonia gas, sulfur oxide.

11. TOXICOLOGICAL INFORMATION

Product hazard information	No data available
Components hazard information	
Ammonium Sulfate	
Acute Toxicity	
Oral	Human TDLo = 1,500 mg/kg Rat LD50 = 2,000 - 4,250 mg/kg Mouse LD50 = 640 mg/kg Livestock LDLo = 3,500 mg/kg
Intraperitoneal	Mouse LD50 = 610 mg/kg
Skin	Mouse / Rat LD50 > 2,000 mg/kg
Chronic toxicity	Rat NOAEL = 886 mg/kg/day (mixed feeding)
Skin corrosion / irritation	Rat No irritation
Serious eye damage / irritation	Rat No irritation
Skin sensitization	No data available
Respiratory sensitization	No data available
Germ cell mutagenicity	Ames test ; Negative Chromosome aberration test ; Negative

Reproductive toxicity	No data available
Carcinogenicity	No data available
STOT-single exposure	<p>Oral exposure caused staggering, blunt hemp, and effort breathing in rats, and mydriasis, irregular breathing, and convulsions that spread from local areas (face and extremities) to the whole body in rabbits, died of cardiac arrest as a result. However, no histopathological changes were observed in each organ of rats and rabbits. On the other hand, EEG examination revealed rabbits to be a classic case of hyperammonemia. Based on these results, the post-exposure effects were speculated to be ammonia neurotoxicity. Since it exceeds the upper limit of the guidance value range (2,000 mg/kg) in rats and is found at 1,500 mg/kg in rabbits, it may cause damage to the nervous system.</p> <p>In humans, inhalation exposure to 0.1 – 0.5 mg ammonium sulfate/m³ aerosol for two to four hours produced no pulmonary effects. At 1 mg ammonium sulfate/m³ very slight pulmonary effects in the form of a decrease in expiratory flow, in pulmonary flow resistance and dynamic lung compliance were found in healthy volunteers after acute exposure.</p>
STOT-repeated exposure	<p>Rat inhalation toxicity test (0.3 mg/L, 8h/day, 14days) ; No effect</p> <p>Rat 13-week repeated oral dose study (1,792 mg/kg/day) ; No effect</p>
Ammonium Dihydrogenphosphate	
Acute Toxicity	
Oral	<p>Rat LD50 = 3,250 mg/kg, sedation, convulsions, tremors, ataxia, prostration</p> <p>Rat LDLo = 4,640 mg/kg, somnolence (RTECS)</p>
Skin	<p>Rat LD50 > 5,000 mg/kg</p> <p>Rabbit LD50 > 4,640 mg/kg (RTECS)</p>
Inhalation (Vapours)	No data available
Inhalation (Dusts)	No data available
Hazardous to human	
Eyes	In Diammonium hydrogen phosphate, Redness, Pain (ICSC)
Chronic toxicity	No data available
Skin corrosion / irritation	No data available
Serious eye damage/irritation	No data available
Skin sensitization	No data available
Respiratory sensitization	No data available
Germ cell mutagenicity	No data available
Reproductive toxicity	No data available
Carcinogenicity	No data available

STOT-single exposure	No data available
STOT-repeated exposure	No data available
Potassium Sulfate	
Acute Toxicity	
Oral	Mouse LD50 = 6,600 mg/kg Rat LD50 = 6,600 mg/kg
Inhalation	No data available
Chronic toxicity	No data available
Hazardous to human	
Inhalation	Cough, Sore throat (ICSC)
Skin	Redness (ICSC)
Eyes	Redness, Pain (ICSC)
Oral intake	Abdominal pain, Diarrhoea. Nausea. Vomiting (ICSC)
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No data available
Skin sensitization	No data available
Respiratory sensitization	No data available
Repeated-dose/ reproductive/developmental toxicity screening study (OECD TG 422)	Rat Oral administration for 28 days NOAEL > 1,500 mg/kg/day
Germ cell mutagenicity	Ames test ; Negative Chromosome aberration test ; Negative
Reproductive toxicity	No data available
Carcinogenicity	No data available
STOT-single exposure	No data available
STOT-repeated exposure	No data available
Citric Acid, Anhydrous	
Acute Toxicity	
Oral	Mouse : LD50 = 5,040 mg/kg Rat : LD50 = 3,000-12,000 mg/kg Rabbit : Lethal dose = 7,000 mg/kg (probably lowest lethal dose)
Intraperitoneal	Mouse : LD50 = 903 mg/kg Rat : LD50 = 290 mg/kg
Intravenous	Mouse : LD50 = 42 mg/kg Rabbit : LD50 = 330 mg/kg
Subcutaneous	Mouse : LD50 = 2,700 mg/kg Rat : LD50 = 5,500 mg/kg
Inhalation	Human : Cough. Shortness of breath. Sore throat.
Chronic toxicity	No data available
Skin corrosion / irritation	Rabbit : 500 mg/24h (mild) Human : Redness.

Serious eye damage / irritation	Rabbit : 0.75 mg/24h (severe) Human : Redness. Pain.
Respiratory sensitization	No data available
Skin sensitization	No data available
Mutagenicity / Genotoxicity	No data available
Carcinogenicity	No data available
Reproductive and Developmental toxicity	No data available
STOT-single exposure	The substance is irritating to the eyes, skin, and respiratory tract.
STOT-repeated exposure	May cause tooth acid erosion.

12. ECOLOGICAL INFORMATION

Product hazardous information No data available

Components hazardous information

Ammonium Sulfate

Hazardous to the aquatic environment (Acute)

Fish (juvenile *Oncorhynchus mykiss*) LC50 (96 h) = 173 mg/L

Fish (*Danio rerio*) LC50 (96 h) = 420mg/L

Fish (Guppy) LC50 (96 h) = 126 mg/L

Invertebrate (*Helisoma trivolvis*) LC50 (24 h) = 393 mg/L

Crustacea (*Daphnia magna*) EC50 (96 h) > 100 mg/L

Algae (*Chlorella vulgaris*) EC50 (18 days) = 2,700 mg/L

Perna viridis EC50 (96 h) = 47.7 mg/L

Hazardous to the aquatic environment (Long-term)

Fish (juvenile *Oncorhynchus gorbuscha*)
NOEC = 11 mg/L (61 days)

Persistence and degradability

Readily degradable

Hazardous to the ozone layer

Not listed in the annex to the Montreal Protocol

Ammonium Dihydrogenphosphate

Hazardous to the aquatic environment (Acute)

Fish (*Oncorhynchus mykiss*) LC50 (96 h) = 85.9 mg/L

Hazardous to the aquatic environment (Long-term)

In water the phosphate salts may result in eutrophication (caused by ammonium and phosphate ions), which may lead to increased algal growth. Decomposition of the algae may in turn result in lower dissolved oxygen concentrations. If dissolved oxygen concentrations are lowered significantly, suffocation of other aquatic organisms may occur.

Hazardous to the ozone layer

Not listed in the annex to the Montreal Protocol

Potassium Sulfate

Hazardous to the aquatic environment (Acute)

Fish (*Pimephales promelas*, Fathead minnow)
LC50 (96h) = 680 mg/L (pH 7.5-9.0)

Fish (*Lepomis macrochirus*, Bluegill)

LC50 (96h) = 3,550 mg/L (pH 7.2-9.2)

	Fish (Alburnus alburnus) LC50 (96h) = 1,692-2,380 mg/L Crustacea (Daphnia magna) EC50 (48 h) = 720 mg/L, EC50 (48h) = 890 mg/L Algae (Scenedesmus subspicatus) EC50 (72h) = 2,900mg/L No data available
Hazardous to the aquatic environment (Long-term)	
Hazardous to the ozone layer	Not listed in the annex to the Montreal Protocol
Citric Acid, Anhydrous	
Hazardous to the aquatic environment, Short term	Fish <i>Lepomis macrochirus</i> (Bluegill) : LC50 (96h) = 1,516 mg/L <i>Leuciscus idus</i> (Cyprinidae) : LC50 (96h) = 440-760 mg/L (not neutralised) Crustacea <i>Daphnia magna</i> : EC0 = 1,206 mg/L, EC50 = 1,535 mg/L, EC100 = 2,083 m/L (neutralised) <i>Daphnia magna</i> : EC0 = 73 mg/L, EC50 = 85 mg/L, EC100 = 98 mg /L (not neutralised) <i>Carcinus maenas</i> (European green crab) : LC50 (48h) = 160 mg/L Algae <i>Scenedesmus quadricauda</i> : EC0 (7d) = 640 mg/L <i>Pavlova lutheri</i> : TLC (7d) = 1-300 mg/L "saltwater" Bacteria <i>Microcystis aeruginosa</i> : EC0 (8d) = 80 mg/L <i>Nitrosomonas</i> sp. : No inhibition on NH ₃ oxidation at 100 mg/L <i>Pseudomonas putida</i> : EC0 (16h) > 10,000 mg/L <i>Uronema parduzci</i> : TLC = 622 mg/L
Hazardous to the aquatic environment, Long term	Fish <i>Carassius auratus</i> : LC0 = 625 mg/L, LC100 = 894 mg/L "long-time exposure in soft water" Crustacea <i>Daphnia magna</i> : EC0 = 80 mg/L, EC100 = 120 mg/L "long-time exposure in soft water"
Persistence and degradability	Readily degradable
Hazardous to the ozone layer	Not listed in the annex to the Montreal Protocol.

13. DISPOSAL CONSIDERATIONS

Waste from residues

Follow the relevant laws and local disposal regulations. Entrust disposal to and industrial waste contractor or local public body that is authorized by the prefectural governor where available.

Contaminated container and contaminated packaging

Store waste in appropriate condition and do not drain into watercourse.

Either clean and recycle the containers, or dispose of them suitably according to the relevant laws and regulations, and local disposal regulations. When disposing of empty containers, make sure to discard the contents completely.

14. TRANSPORT INFORMATION

International regulations

ADR/RID

UN number	Not regulated
Proper shipping name	-
UN classification	-
Packing group	-

IMDG

UN number	Not regulated
Proper shipping name	-
UN classification	-
Packing group	-
Marine pollutant (Sea) the IBC code	Not applicable

ICAO/IATA

UN number	Not regulated
Proper shipping name	-
UN classification	-
Packing group	-

Japanese regulations

Information on road transport regulation	Not regulated
Information on marine transport regulation	Not regulated
Marine pollutant substance	Not regulated
Information on air transport regulation	Not regulated

Emergency Response Guidebook (Yellow-card)

Not regulated

Special precautions

Check the container is not damaged, corroded, or leaked before transported. Avoid direct sunlight. Be careful not to fall, drop, or damage when loading, and ensure not to collapse. Equip the truck and ship with protective equipments (gloves, glasses, masks, etc.), and fire extinguishers, tools necessary for emergency.

15. JAPANESE REGULATORY INFORMATION

Fertilizer Regulation Act	Fertilizer - Compound fertilizer
Industrial Safety and Health Act	Dangerous and hazardous substances subject to notice and package the name: Not listed
Water Pollution Prevention Act	Harmful substances (Cabinet Order Article2, 26) : Ammonia, Ammonium compounds, Nitrite compounds and Nitric acid compounds Emission standard: 100mg/L(total of ammonium nitrogen x 0.4, nitrite nitrogen, and nitrate nitrogen)
Act on Prevention of Marine Pollution and Maritime Disaster	Hazardous liquid substance (Z class substance) : Ammonium Sulfate solution, Ammonium hydrogen phosphate solution
Air Pollution Control Act	Not applicable
Chemical Substance Emission Control Promotion Act (PRTR)	Not applicable
Foreign Exchange and Foreign Trade Act	Export Trade Control Order row 16 of appended table 1 [HS: 3102 Mineral or chemical fertilisers, nitrogenous]

16. OTHER INFORMATION

References

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- 2) Incorporated Administrative Agency National Institute of Technology and Evaluation (NITE), JAPAN : NITE Chemical Risk Information Platform (NITE-CHRIP) -English version, https://www.nite.go.jp/en/chem/chrip/chrip_search/srhInput
- 3) Incorporated Administrative Agency National Institute of Technology and Evaluation (NITE), JAPAN : Japan CHEMicals Collaborative Knowledge database (J-CHECK) -English version, https://www.nite.go.jp/chem/jcheck/search.action?request_locale=en
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- 6) Ministry of Economy, Trade and Industry, JAPAN : Montreal_Protocol_Annex -Japanese, https://www.meti.go.jp/policy/chemical_management/ozone/files/law_ozone/law_ozone_laws/Montreal_Protocol_Annex.pdf
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- 11) SIDS INITIAL ASSESSMENT PROFILE, Ammonium sulfate, <https://hpvchemicals.oecd.org/UI/handler.axd?id=4e17215a-1849-4517-91a4-a31ba0c28c46>
- 12) NIPPON STEEL Chemical & Material Co., Ltd. (2012) : Ammonium Sulfate, SDS -Japanese version

Ammonium Dihydrogenphosphate, references

- 13) Incorporated Administrative Agency National Institute of Technology and Evaluation (NITE), JAPAN : NITE Chemical Risk Information Platform (NITE-CHRIP) -English version, Ammonium Dihydrogenphosphate, https://www.nite.go.jp/en/chem/chrip/chrip_search/cmpInfDsp?cid=C005-857-44A&bcPtn=0&shMd=0&txNumSh=NzcyMi03Ni0x<NumTp=1<NumMh=0&txNmSh=<NmTp=<NmMh=1&txNmSh1=<NmTp1=&txNmSh2=<NmTp2=&txNmSh3=<NmTp3=&txMlSh=<MlMh=0<ScDp=0<PgCtSt=100&rbDp=0&txScSML=&txScSML2=<ScTp=1&txUpScFl=null&hdUpScPh=&hdUpHash=&rbScMh=1&txScNyMh=&txMIWtSt=&txMIWtEd=&err=&cngLngMd=1
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Disclaimer

This SDS was prepared on the basis of laws and information available at the date of creation, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Some new information or amendments may be added afterwards. The precautions are for normal handling. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation.

Department that wrote : R&D Section