MATERIALSAFETYDATASHEET

Gratum 500 SC

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Fluazinam 500g/L SC

Company Name: Jiangyin Suli Chemical Co., Ltd.

Address: No.7, Runhua Road, Ligang Town, Jiangyin City, Jiangsu Province

SECTION 2: COMPOSITION AND INFORMATION ON INGREDIENTS Name CAS # g/l

Fluazinam	79622-59-6	500
Other ingredients	-	up to 1 L

SECTION 3: HAZARDS IDENTIFICATION 3.1 GHS Classification

Pictogram(s)	
Signal	Warning
GHS Hazard Statement	H317: May cause an allergic skin reaction. H361d: Suspected of damaging the unborn child. H410: Very toxic to aquatic life with long lasting effects. EUH401: To avoid risks to human health and the environment comply with the instructions for use.

Precautionary Statement Codes	P261: Avoid breathing vapours. P280: Wear protective gloves, protective clothing and eye/face protection. P302+P352: IF ON SKIN: Wash with plenty of water P308+P313: IF exposed or concerned: Get medical attention/advice. P362+P364: Take off contaminated clothing and wash it before reuse. P501: Dispose of contents/container in accordance with national regulation

SECTION 4: FIRSTAID MEASURES In case of poisoning by any exposure route contact a doctor or Poisons Information Center.

Inhalation: If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

Skin contact: Clothing contaminated with material must be removed immediately and all skin washed thoroughly with water and soap. Get medical attention if irritation develops.

Eye contact: Immediately rinse eyes with much water or eyewash solution, occasionally opening eyelids, until no evidence of chemical remains. Remove contact lenses after a few minutes and rinse again. See physician if irritation persists.

Ingestion: Let the exposed person rinse mouth and let him/her drink several glasses of water or milk, but not induce vomiting. If vomiting does occur, let him/her rinse mouth and drink fluids again. Never give anything by mouth to an unconscious person.
Get medical attention immediately.

Most important symptoms and effects, both acute and delayed: Irritation and allergic reactions. The symptoms of the allergic effect range from mildly itchy, papular rash to painful, weeping and blistering dermatitis. Advice to doctor: No specific antidote exists. Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing Media: Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams.

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Special hazards arising from the substance or mixture: The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as hydrogen fluoride, hydrogen chloride, nitrogen oxides, carbon monoxide, carbon dioxide, sulphur dioxide and various fluorinated and chlorinated organic compounds. **Advice for firefighters:** Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water runoff. Firemen should wear selfcontained breathing apparatus and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: It is recommended to have a predetermined plan for the handling of spills. Empty, sealable vessels for the collection of spills should be available.

In case of large spill (involving 10 tonnes of the product or more):

1. use personal protection equipment; see section 8
2. call emergency telephone no.; see section 1
3. alert authorities.

Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots.

Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area. Avoid and reduce vapour or mist formation as much as possible. Personal contact with the product must be avoided.

Environmental precautions: Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.

Methods and material for containment and cleaning up: It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be absorbed onto an absorptive material such as universal binder, Fuller's earth or other absorbent clays. Collect the contaminated absorbent in suitable containers. Clean area with much water and detergent. Absorb wash liquid onto absorbent and transfer to suitable containers. The used containers should be properly closed and labelled.

Large spills which soak into the ground should be dug up and transferred to suitable containers.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling: Pregnant women should not work with this product.

In an industrial environment it is important to avoid all personal contact with the product, if possible by using closed systems with remote system control. The material should be handled by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise.

For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force.

Keep all unprotected persons and children away from working area.

Remove contaminated clothing immediately. Wash thoroughly after handling. Before removing gloves, wash them with water and soap. After work, take off all work clothes

and footwear. Take a shower, using water and soap. Wear only clean clothes when leaving job. Wash protective clothing and protective equipment with water and soap after each use.

Do not discharge to the environment. Do not contaminate water when disposing of equipment wash waters. Collect all waste material and remains from cleaning equipment, etc., and dispose of as hazardous waste.

Conditions for safe storage, including any incompatibilities: The product is stable under normal conditions of warehouse storage. Protect from strong sunlight and heat. Recommended storage temperature 5 - 30°C.

Store in tightly closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

Specific end use(s): The product is a registered pesticide which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION Control parameters

Personal exposure limits: To our knowledge, personal exposure limits have not been established for fluazinam or any other ingredient in this product. An 8-hr TWA exposure limit of 0.7 mg/m^3 is recommended by the manufacturer for fluazinam. However, other personal exposure limits defined by local regulations may exist and must be observed.

Fluazinam

DNEL: Not established; EFSA has established an AOEL of 0.004 mg/kg bw/day

PNEC, aquatic: 0.53 µg/l **Exposure controls**

When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping systems nonhazardous before opening.

The precautions mentioned below are primarily meant for handling of the undiluted product and for preparing the spray solution, but can be recommended for spraying as well. In cases of incidental high exposure, maximal personal protection may be necessary, such as respirator, face mask, chemical resistant coveralls.

If allergic reactions occur, it may be necessary to isolate the person from the product.

Respiratory protection: In the event of an accidental discharge of the material, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Protective gloves: Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber. The breakthrough time of these materials for this product are unknown. Generally, however, the use of protective gloves will give only partial protection against dermal exposure. Small tears in the gloves and cross-contamination can easily occur. It is recommended to limit the work to be done manually and to change the gloves regularly. Before removing gloves, wash them with water and soap. Be careful not to touch anything with contaminated gloves.

Eye protection: Wear face shield rather than safety glasses. It is recommended to have an emergency eye wash fountain immediately available in the work area when there is a potential for eye contact.

Other skin protection: Wear appropriate chemical resistant clothing to prevent skin contact depending on the extent of exposure. During most normal work situations where exposure to the material cannot be avoided for a limited time span, waterproof pants and apron of chemical resistant material or coveralls of polyethylene (PE) will be sufficient. Coveralls of PE must be discarded after use if contaminated. In cases of excessive or prolonged exposure, coveralls of barrier laminate may be required.

SECTION 9: PHYSICALAND CHEMICAL PROPERTIES

Appearance: Light yellow to light red-brown liquid

Odor: Practically odourless

Molecular weight: 465.14 **Molecular formula:** $C_{13}H_4Cl_2F_6N_4O_4$

Flash Point: Above 103°C if any (Pensky-Martens closed cup) **Combustibility:** Non-combustible **pH:** 7.5 - 8.3

Viscosity: 1400 - 1800 mPa s, depending on shear rate

Explosive properties: Not explosive **Oxidising properties:** Not oxidizing **Relative density:** 1.28 at 20°C

SECTION 10: STABILITYAND REACTIVITY DATA

Reactivity: To our knowledge, the product has no special reactivities.

Chemical stability: The product is stable during normal handling and storage at ambient temperatures.

Possibility of hazardous reactions: None known.

Conditions to avoid: Heating of the product will evolve harmful and irritant vapours.

Incompatible materials: Strong oxidizing bases and acids.

SECTION 11: TOXICOLOGICAL INFORMATION

Oral LD_{50} (Rats): LD_{50} >2000 mg/kg.

Dermal LD_{50} (Rats): Acute percutaneous LD_{50} for rabbits >2000 mg/kg.

Inhalation: LC_{50} (4 h) for rats >5.0 mg/l (total aerosol).

Eye Irritation (Rabbits): Mild eye irritant (rabbits).

Skin Irritation (Rabbits): No skin irritant (rabbits).

Sensitization (Guinea Pigs): No sensitization to albino guinea pigs.

Antidote: No specific antidote is known. Apply symptomatic therapy.

SECTION 12: ECOLOGICAL INFORMATION

Algae: EC_{50} was > 0.02 mg/L

Daphnia Magna: EC_{50} was > 0.30 mg/L

Earthworm: LD_{50} > 500 mg/kg dry soil

Rainbow Trout: LD_{50} > 0.7 mg a.i./L

Bobwhite Quail: LD_{50} > 2000 mg/kg

Honeybee: LD_{50} > 100.0 µg/bee

- Fish Rainbow trout (Oncorhynchus mykiss) ..... 96-h LC_{50}: 0.16 mg/l
- Invertebrates Daphnids (Daphnia magna) ..... 48-h EC_{50}: 0.23 mg/l
- Algae Green algae (Desmodesmus subspicatus) ..... 96-h I_rC_{50}: 0.13 mg/l
- Plants Duckweed (Lemna gibba) ..... 7-day E_rC_{50}: 0.57 mg/l
  7-day $NOEC_r$: 0.094 mg/l
- Birds Japanese quail (Coturnix coturnix japonica) ..... LD_{50}: > 2000 mg/kg
- Earthworms Eisenia foetida ..... 14-day LC_{50}: > 1000 mg/kg dry soil
- Bees Honeybee (Apis mellifera) ..... 48-h LD_{50}, contact: > 100 µg/bee 48-h LD_{50}, oral: > 100 µg/bee

Persistence and degradability

Fluazinam is biodegradable, but it does not meet the criteria for being readily biodegradable. It undergoes degradation in the environment and in waste water treatment plants.

Primary degradation half-lives for fluazinam vary much with circumstances, but are usually a few months in aerobic soil and water.

The product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Bioaccumulative potential

See section 9 for octanol-water partition coefficient.

Fluazinam has a small potential to bioaccumulate, but is metabolised relatively rapidly. The bioconcentration factor is measured to 500 -800 for whole fish (bluegill sunfish, Lepomis macrochirus).

Mobility in soil: Fluazinam has low mobility in soil.

Results of PBT and vPvB assessment: None of the ingredients meets the criteria for being PBT or vPvB.

Other adverse effects: Other relevant hazardous effects in the environment are not known.

SECTION 13: DISPOSAL CONSIDERATIONS Waste treatment methods

Remaining quantities of the material and empty but unclean packaging should be regarded as hazardous waste

Disposal of waste and packagings must always be in accordance with all applicable local regulations

Disposal of product

According to the Waste Framework Directive (2008/98/EC), possibilities for reuse or reprocessing should first be considered If this is not feasible, the material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal Do not discharge to sewer systems

Disposal of packaging

It is recommended to consider possible ways of disposal in the following order:

1. Reuse or recycling should first be considered Reuse is prohibited except by the authorisation holder If offered for recycling, containers must be emptied and triply rinsed (or equivalent) Do not discharge rinsing water to sewer systems
2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials
3. Delivery of the packaging to a licensed service for disposal of hazardous waste
4. Disposal in a landfill or burning in open air should only occur as a last resort For disposal in a landfill, containers should be emptied completely, rinsed and punctured to make them unusable for other purposes If burned, stay out of smoke

SECTION 14: TRANSPORT INFORMATION

Shipping Name: Environmentally hazardous substance, liquid, n.o.s. (fluazinam)

UN Number: UN 3082 **Hazard Class:** 9 **Packing Group:** PG III **Environmental hazards:** Marine pollutant

Special precautions for user: Avoid any unnecessary contact with the product. Misuse can result in damage to health. Do not discharge to the environment.

SECTION 15: OTHER REGULATORY INFORMATION

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There is no special information for it.

SECTION 16: OTHER INFORMATION

The information contained in the Safety Data sheet is correct to the best of our knowledge at the date of issue. It is intended as a guide for the safe use, handling, disposal, storage and transportation and is not intended as a warranty or as a specification. The information relates only to the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.