SAFETY DATA SHEET

KITAE®

(Soluble concentrated solution – SL, 10% chitosan)

SECTION 1: Identification of the substance and of the company

1.1 Product identifier

Brand name: KITAE
Product code: N.A.

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

- *Relevant identifier uses of the substance*: Function of plant protection as elicitor, having a fungicide and bactericide effect via the stimulation of natural defence mechanisms.
Concentrated liquid preparation to be used in dilution with water for application to different crops, or as a seed treatment, according to the information written on the label.
- *Uses advised against*: No data is available

1.3 Details of the supplier of the safety data sheet

Supplier: GREEN IMPULSE SAS
Address: 1, rue Alexandre Fleming 49 000 Angers – France
Phone number: 06 99 24 67 99
Email: a.olivaud@greenimpulse.fr
Website: www.greenimpulse.fr

1.4 Emergency telephone number:

CHEMTREC: 1-800-262-8200
POISON CONTROL: 1-800-222-1222

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

This product does not contain hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

2.2. Hazard statement(s)

According to OSHA HCS 2012, no hazard statement is required for this mixture.

2.3. Hazards not otherwise specified

The mixture does not contain any « Substances of very high concern » (SVHC).
The mixture does not meet the criteria for PBT or vPvB mixtures.
The mixture is not considered to have endocrine disrupting properties according to Article 57(f) of REACH or Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition / information on ingredients

3.1 Substance

N.A

3.2 Mixture:

CAS identifier	Name / Chemical name	% (weight)	HMIS Health rating
9012-76-4	Chitosan / Poly-D-glucosamine	10 %	Not classified
8028-52-2	Vinegar (< 8% acetic acid)	90 %	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

Immediately remove any clothing contaminated by the product. Move out of dangerous area. Consult a physician and show this material safety data sheet.

- *Inhalation:* Move the patient to fresh air and keep him/her warm and at rest. If breathing is irregular or stopped, give artificial respiration, and seek medical attention.
- *Eye contact: The product being acid, w*ash with plenty of clean and fresh water for 15 minutes, holding eyelids apart. If pain, redness, or visual discomfort appears, consult an ophthalmologist.
- *Skin contact:* Wash skin thoroughly with soap and water or use a known cleanser.
- *Ingestion:* Get medical attention and show the label.

4.2. Main symptoms and effects, acute and delayed

No data is available.

4.3. Indication of any immediate medical attention and special treatment required

No data is available.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Water spray, chemical foam, carbon dioxide.

5.2. Specific hazards arising from the chemical

A fire will often produce thick black smoke. Exposure to decomposition products may pose health risks. Do not breathe fumes.

5.3. For firefighters

No data is available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective equipment and keep unprotected personnel away. Ensure adequate ventilation. Remove all sources of ignition. Prevent further leak of spill if safe to do so. For personal protective equipment, please refer to section 8.

6.2. Environmental protections

Contain and collect leaks with non-combustible absorbent materials, e.g., sand, earth, vermiculite, diatomaceous earth in drums for disposal.

Prevent from entering sewers or waterways.

6.3. Methods and materials for containment and cleaning up

Prevent further leak or spill if safe to do so. Vacuum, sweep up, or absorb with inert material and place into a suitable disposal container. Consult local regulations for disposal. See section 13 for further disposal information.

6.4. Reference to other sections

No data is available.

SECTION 7: Handling and storage

The requirements for storage rooms are applicable to workshops where the mixture is handled.

7.1. Precautions for safe handling

Protect hands and eyes when handling and wash hands with water in case of skin contact.

Keep out of the reach of children.

- *Fire Prevention*: Prohibit access to unauthorized persons.
- *Recommended equipment and procedures:* For personal protection, see section 8. Comply with label precautions and occupational health and safety regulations.
- *Prohibited equipment and procedures:* Smoking, eating, and drinking are prohibited in the areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

Keep out of reach of children.
Store away from frost and weather.
Store at a temperature not exceeding 40°C – 50°C.
Always store in packaging of the same material as the original.

7.3. Specific end use(s)

No data is available.

SECTION 8: Exposure controls and personal protection

8.1. Control parameters

- *OSHA PEL*: Not available.
- *NIOSH REL:* Not available.
- *ACGIH TLV:* Not available.

8.2. Exposure controls

8.2.1 Appropriate engineering controls

Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Facilities storing or utilizing this material should be equipped with and eyewash fountain. Use adequate general and local exhaust ventilation to keep airborne concentrations low.

8.2.2 Personal protection

Pictograms

- *Eyes:* Based on an evaluation of the eye or face hazards present, wear chemical splash-resistant safety glasses or goggles with slide protection. A face shield may be appropriate in some workplaces. Use eyewear tested and approved under appropriate government standards such as OSHA 29 CFR 1910.133 or EU EN166.
- *Hands:* Wear gloves selected based on an evaluation of the possible hazards to hands and skin, the duration of use, the physical conditions of the workplace, and the chemical resistance and physical properties of the glove material. Protectives gloves EN 374.
- *Skin and body:* Protective clothing must be selected based on the hazards present in the workplace, the physical environment, the duration of exposure, and other factors. No fabric can provide protection against all potential hazards; therefore, it is important to select the appropriate protective clothing for each specific hazard. At a minimum, wear a laboratory coat and close-toed footwear (e.g safety shoes EN ISO 20345).
- *Respiratory:* Respiratory protection is not required for normal use. If use causes concentrated vapours, use a chemical vapour filter mask.

8.2.3 Environmental exposure controls

Follow best practice for site management and disposal of waste.

SECTION 9: Physical and chemical properties

9.1. Information on physical and chemical properties

Physical form: Liquid
Odor: slightly vinegar smell
Appearance: viscous and transparent solution
Color: brown
pH: 3.5 – 4.0
Flash point: N.A
Vapor pressure (50°C): NA
Density: 1,03 to 1,05
Water solubility: 100% soluble in a water at pH [2 - 6.5]
Viscosity: 120 Cps

SECTION 10: Stability and reactivity

10.1. Reactivity

Oxidizable product which reacts with strong oxidants and strong bases. Avoid mixing with basic products with a pH >8.

10.2. Chemical stability

This mixture is stable under the normal handling and storage conditions recommended in section 7.

10.3. Possibility of hazardous reactions

No data is available.

10.4. Conditions to avoid

Storage should avoid exposure to frost.

10.5. Incompatible materials

Keep away from: strong bases and strong oxidizing agents. Risk of precipitation when mixed with strong base type products. Incompatible with strong bases and strong oxidizing agents.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Chitosan was added to the list of Minimum Risk Active Ingredient as it poses no concern to human health and the environment when used as a pesticide. Vinegar is a commonly consumed food commodities which appears on the list of inert ingredients allowed to enter in the composition of Minimum Risk Pesticides.

Acute toxicity

- Oral: LD_{50} chitosan in mice= 16 g/kg (Hirano, 1996)
- Dermal: N.A
- Inhalation: N.A
- Skin irritation: N.A
- Eye corrosion: N.A

11.1.1. Substances

11.1.2. Mixture

No data is available.

SECTION 12: Ecological information

Natural product which biodegrades. No tendency to bioaccumulate.

SECTION 13: Disposal considerations

Dispose of content and/or container as a weak acid in accordance with local, regional, national, and/or international regulations.

SECTION 14: Transport information

Exempt from Transport classification and labelling.

Air transportation: Non-hazardous as per latest updating of IATA 2020.

SECTION 15: Regulatory information

The product KITAE is a 25(b) Minimum Risk Pesticides and is therefore exempted from registration under the FIFRA. This is true as it is composed only by chitosan, which is listed as a minimum risk active ingredient (see amendment 87 FR 67364 to 40 CFR 152.25(f)(1)) and vinegar, which is an inert ingredient (40 CFR § 152.25(f)(2)).

SECTION 16: Other information

Redaction Date: January 10th, 2023
Update: -

As the working conditions of the user are not known to us, the information given in this safety data sheet is based on the state of our knowledge and on both national and Community regulations.
The mixture must not be used for other purposes than those specified in section 1 without first obtaining written handling instructions.
It is always the responsibility of the user to take all necessary measures to meet the requirements of local laws and regulations.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall GREEN IMPULSE be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if GREEN IMPULSE has been advised of the possibility of such damages.