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## SAFETY DATA SHEET

### 1. Identification

Product: **ARMOUR-Zen**

License Classification:

New Zealand: Registered pursuant to the ACVM Act 1997, No: P7570

Recommended Use: for the control of *Botrytis cinerea* and *Sclerotinia sclerotiorum*

Permitted Crops: grapes, kiwifruit, black currants, ornamentals

Supplier: Botry-Zen Limited  
PO Box 5664  
21 Willis Street  
Dunedin  
New Zealand

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### 2. Hazard Identification

Classification of the substance: ARMOUR-Zen is ecotoxic. Hazard class 9.1A.

Precautions:

- Avoid contamination of the water supply with the product or empty container.
- In the case of a spill, contain the spill and remove contaminated material to be disposed of in an approved landfill.
- Keep out of reach of children.
- Store in original container, tightly closed away from foodstuffs.
- Avoid contact with skin and eyes and inhalation of spray mist and/or concentrate.
- When mixing or applying wear protective eyewear and waterproof gloves.
- Wash hands and exposed skin before meals and after using.

3. Composition/information on ingredients

Common name of the substance: chitosan

CAS # : 9012-76-4

4. First-Aid Measures:

*Eyes:* Flush eyes immediately with a continuous gentle stream of water for 15 minutes. Get medical attention if irritation persists.

*Skin:* Immediately wash the affected area with soap and water. Get medical attention if irritation persists.

*Ingestion:* Wash mouth out with clean water. Do not induce vomiting unless instructed to do so by qualified medical personnel. Get medical attention if discomfort occurs,

*Inhalation:* Remove individual to fresh air. If breathing difficulty occurs, get medical attention.

*Note to physician:* There is no specific antidote. Employ supportive care. Treatment should be based on judgment of the physician in response to reactions of the patient.

5. Fire-Fighting Measures:

*Extinguishing media:* Water, fog, foam, CO<sub>2</sub>, sand.

*Flammable limits:* Not available

*Auto-ignition temperature:* Not available

Sensitivity to mechanical impact / static discharge: Not available

6. Accidental Release Measures:

If the spill occurs out of doors, cover it with an absorbent material to prevent dispersion of the spilled material until recovery can begin. Soak up material from broken containers, and store collected material in secure containers until safe disposal can be arranged.

7. Handling and Storage:

**Handling:** Practice good care and good safety precautions when handling this product. Avoid contact with eyes, skin and clothing. Contaminated clothing should be washed separately from domestic laundry and line-dried. Users should wash hands before eating and drinking.

**Storage:** Store in original containers only. Store ARMOUR-Zen<sup>®</sup> in a cool place (<20°C). Keep containers tightly closed when not in use.

8. Exposure controls/personal protection

For brief contact during manufacture, warehousing and transport, wear clean body-covering clothing. During operations where direct contact with ARMOUR-Zen<sup>®</sup> may occur additional protection may be required. This includes mask, gloves, coveralls, and safety glasses.

9. Physical and chemical properties:

Appearance:	golden brown
Odour:	vinegar
Odour threshold:	not available
pH:	4.8 – 5.2
Melting point/freezing point:	not available
Initial boiling point and boiling range:	not available
Flash point:	not available
Evaporation rate:	not available
Flammability:	not available
Upper/lower flammability of explosive limits:	not available
Vapour pressure:	do not apply
Vapour density:	do not apply
Relative density:	
Solubility:	
Partition coefficient: n-octanol/water:	not available
Auto-ignition temperature:	do not apply
Decomposition temperature:	not available
Viscosity:	

10. Stability and Reactivity

**Reactivity:** Avoid oxidizing materials

**Stability:** This product is stable under normal storage conditions.

**Hazardous decomposition products:** Oxides of nitrogen and carbon are produced under fire conditions.

**Hazardous polymerization:** Not known to occur.

11. Toxicological Information

Acute toxicity: Not available

Skin corrosion/irritation: May cause skin irritation.

Serious eye damage/irritation: May cause eye irritation.

Respiratory or skin sensitization: Not available

Germ cell mutagenicity: Not available

Carcinogenicity: Not available

Reproductive toxicity: Not available

STOST-single exposure: Not available

STOST-repeated exposure: Not available

Aspiration hazard: Not available

**Note:** Normal or casual exposure to this product is not expected to cause unusual acute or chronic health risks to workers, bystanders or consumers.  
Chronic effects: Chronic exposure may aggravate existing medical conditions.

12. Ecological Information

ARMOUR-Zen<sup>®</sup> is an aquatic toxicant and should not come into contact with waterways.

ARMOUR-Zen<sup>®</sup>, once taken up by plants is converted to naturally occurring substances that present no hazards to the environment.

13. Disposal considerations

Triple rinse empty containers and dispose of at an AgRecovery site

14. Transport information

Proper shipping name environmentally hazardous substance liquid, NOS (chitosan)  
Hazard Class 9  
UN No 3082  
Packing Group III

15. Regulatory information

Registered pursuant to the ACVM Act 1997, No P7570

16. Other Information

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