SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name:	**Kenso Agcare Fumiken Fumigation Tablet**
Product Type:	Group 24A Insecticide
Company Name:	Kenso Corporation (M) Sdn Bhd
Address:	Level 1, 98 Commercial Road, Teneriffe, 4005 QLD.
Telephone Number:	(07) 3216 1188
Facsimile Number:	(07) 3216 0388
Emergency Telephone Number:	000 (Police or Fire Brigade) **13 11 26 (Poisons Information Centre)**
Use:	For the control of insect pests of stored products in certain situations as per the Directions for Use table.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification: Classified as hazardous according to criteria of Safe Work Australia.
Classified as a Dangerous Good according to the ADG code.

Classification of the Hazardous Chemicals:	Substances and mixtures, which in contact with water, emit flammable gases – Category 1 Acute toxicity (oral) – Category 1, 2 Acute toxicity (inhalation) – Category 1, 2 Hazardous to the aquatic environment, short term – Acute 1
GHS Signal Word:	**DANGER**
Hazard statement:	H260: In contact with water releases flammable gases which may ignite spontaneously. H300: Fatal if swallowed. H330: Fatal if inhaled. H400: Very toxic to aquatic life.
Prevention:	P223: Do not allow contact with water. P231+P232: Handle and store contents under inert gas. Protect from moisture. P260: Do not breathe dust/fume/gas/mist/vapours/spray. P264: Wash contacted areas thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P284: Wear respiratory protection.

Response:	P301+P310: IF SWALLOWED: Immediately call a POISON CENTRE/ doctor/physician. P302+P335+P334: IF ON SKIN: Brush off loose particles from skin and immerse in cool water. P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P310: Immediately call a POISON CENTER/doctor/ physician. P320: Specific treatment is urgent (see FIRST AID on this label) P330: Rinse mouth. P370+P378: In case of fire: Use dry agent or dry sand to extinguish. Water MUST NOT be allowed to come into contact with the product liberating toxic, flammable phosphine gas. P391: Collect spillage.
Storage:	P402+P404: Store in a dry place. Store in a closed container. P403+P233: Store in a well-ventilated place. Keep container tightly closed. P405: Store locked up.
Disposal:	P501: Dispose of contents and containers as specified on the registered label.
SUSMP Classification:	S7
ADG Classification:	Class 4.3: Dangerous When Wet. Sub Risk: Class 6.1: Toxic substances
UN Number:	1397, ALUMINIUM PHOSPHIDE

Emergency Overview

Physical Description & colour: Grey colour tablets
Odour: Garlic-like odour
Major Health Hazards: Main routes of exposure for aluminium phosphide are through ingestion and inhalation. Aluminium phosphide ingested orally reacts with water and stomach acids to produce phosphine gas, which may account in a large part for observed toxicity. Aluminium phosphide is not absorbed through skin exposure.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS number	Proportion
Phosphine	7803-51-2	33%
(present as aluminium phosphide)	20859-73-8	
Inert ingredients	secret	to 100%

SECTION 4 – FIRST AID MEASURES

Inhalation:	Remove affected persons into fresh air and keep warm and at rest. If feel difficulty in breathing give artificial breathing. Do not apply mouth to mouth resuscitation. Get medical attention.
Skin	Take victim to fresh air in open area. Remove contaminated clothing, safety

contact:	shoes, socks, wash with plenty of clean water and soap. Get medical attention. Shake off or brush the contaminated clothing & keep it in open place for some time before washing.
Eye contact:	Immediately flush with plenty of clean water for 15-20 minutes. Remove contact lenses if present after 5 minutes of washing. Get medical attention
Ingestion:	If ingested, do not induce vomiting. Milk, fats or saline emetics should not be given orally to the victim. Give gastric lavage with potassium permanganate 0.1% Solution (1:1000). This is followed by administration of slurry of medicinal charcoal with water (1g charcoal/Kg body weight). **Do not administer anything orally.** It is important that while going for treatment or calling doctor, keep the product container or label or the applicator's manual ready with you and hand it over to doctor.

Advice to Doctor
No specific antidote known. If patient has swallowed aluminium phosphide, he/she may be emitting toxic phosphine gas. First aid and medical staff must take precaution against exposure to phosphine emitted by such patient. Treat symptomatically. Give repeated gastric lavage with 0.1% potassium permanganate solution till the flushing ceases to carbide (garlic). In case of pulmonary edema, give hypertonic glucose solution intravenously.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazards:
There is little risk of an explosion from this product if commercial quantities are involved in a fire. However, if water is used as an extinguishing agent, an explosion will be likely. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Dangerous Decomposition or Combustion products
Aluminium phosphide as such is not flammable, however in contact with moisture / water releases poisonous gas phosphine, which is flammable.
Extinguishing Media
DO NOT USE WATER. Use dry sand, clay, dry chemical powder or CO_2. Do not confine the spent or partially spent aluminium phosphide fumigant dust, slow release of phosphine may leads to formation of explosive mixture with air.
Precautions for fire fighters
Fire fighters must use self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance. Approach from upwind to avoid hazardous vapours and decomposition products. Used equipment should be thoroughly decontaminated.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills and Disposal
Stop the source of the spill immediately, if safe to do so. Apply aluminium tape to leaking point. Contain the spill to prevent any further contamination of soil or atmosphere. Dispose of spilled aluminium phosphide according to label instructions.

Keep all bystanders away. Wear full-length clothing, gloves and use self-contained breathing apparatus. Shovel and collect the spilled material / contaminated absorbent and place in suitable containers. Thoroughly scrub the floor or other impervious surfaces with a strong industrial detergent and rinse with water. If practical, use local mechanical exhaust ventilation at sources of exposure especially to speed the aeration of silos, warehouses, ship holds, containers, etc.

Spills in water: Evacuate the area, cordon and isolate the contaminated water. Intimate the local authority nearby area not to use the water.
Wet Deactivation:

1. Prepare deactivating solution adding the appropriate amount of low sudsing detergent to water in a drum or other suitable container. Prepare 2% solution or 4 cups of detergent in 130 liters water. The container should be filled with deactivating solution up to few inches of the top.
2. Material is added slowly to the deactivating solution under stirring so as to thoroughly wet the entire product. Use metal grid to keep the product submerged. Keep submerge for 36 hrs. Do not cover the container. This should be done in open air with respiratory protection. Use @ 70 Liters of deactivating solution for 20-25 Kg of the product.
3. Dispose of the slurry of deactivated material, with or without preliminary decanting, at a sanitary landfill or other suitable site approved by local authorities.

The residual dust and spent material remaining after deactivation or fumigation will be a grayish-white, non-hazardous waste which, can be disposed of at a sanitary landfill. The EPA has determined that proper disposal of Aluminium Phosphide will cause no unreasonable adverse effects on the environment.

SECTION 7 – HANDLING AND STORAGE

Handling

In an industrial environment, such as while making formulation, filling or packing, it is recommended to avoid physical contact with the product and to have adequate ventilation.
Avoid spillage into the eyes, or contact with bare skin or clothing. Avoid inhaling vapours. Wash hands, feet, face thoroughly after handling. Remove contaminated clothing immediately.
Avoid breathing gas from tablets or the dust rising from treated grain. Hydrogen phosphide in the head space of containers may flash upon exposure to atmospheric oxygen. When opening, point the container away from the face and body. These precautions will also reduce the risk of exposure to hydrogen phosphide gas.

Storage

The product is stable under normal conditions of storage. Keep container lids tightly closed.
Always store Fumiken under lock in a dry, well-ventilated area away from heat. Label clearly as a pesticide storage area. Do not store in buildings inhabited by humans or animals. Do not allow water or other liquids to contact. Do not pile up large quantities during fumigation or disposal. Open containers only in open place. Do not open in flammable atmosphere. Preferably use up contents of a container at one time. Do not expose the product to atmospheric moisture.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:
When used in a closed / automated system, personal protection equipment may not be required. When closed system is not possible in case of manual handling, sampling, maintenance, repair etc, use suitable PPE.
OSHA permissible exposure limit, TWA for hydrogen phosphide is 0.3 ppm.
Engineering Controls:
Use in a well-ventilated area only. Provide local exhaust or process enclosure ventilation system. Ventilation equipment should be explosive-resistant if explosive concentrations of the material are present. Ensure compliance with applicable exposure limits.
Personal Protection:

Eyes:	Wear goggles, face shield or safety glasses. It is recommended to have an eye wash fountain available in the work area.
Clothing:	Wear appropriate protective clothing to prevent direct skin contact
Gloves:	Wear elbow-length PVC gloves.
Respiratory:	Due to the danger inherent of aluminium phosphide, recommended to use respiratory equipment suited to phosphine gas under normal condition usage. Specific recommendation is a full face mask fitted with type “B” cartridge (usually designated by a grey band). A half-face mask or similarly fitted maybe used in situation not conflicting with label instructions.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Tablet
Colour:	Grey
Odour:	Garlic-like odour
Melting point (°C):	No specific data, solid at normal temperatures
Vapour Pressure:	Not applicable
pH:	9.20 ± 0.04 @ 20°C
Explosiveness:	Not explosive
Auto ignition temperature:	Above 620°C
Flammability Limits:	Non flammable
Solubility in Water:	Reacts with water and liberates phosphine gas

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability
This product is stable under normal storage conditions.
Conditions to Avoid
Avoid contact with water and other oxidizing agents. Hydrogen phosphide gas may react with certain metals (gold, silver, brass, other precious metals and their alloys) and cause corrosion especially at higher temperatures and relative humidity.
Incompatibilities
Avoid water, acids and oxidizing agents.

Hazardous Polymerization
Not known.
Fire Decomposition
Aluminium phosphide as such is not flammable, however in contact with moisture / water releases poisonous gas phosphine, which is flammable.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity
The product is highly toxic. It should be treated with the usual care of handling hazardous chemicals.
Acute Toxicity – Oral
LD_{50} rat: 25 mg/kg
Acute Toxicity – Dermal
LD_{50} rat: 1852.83 mg/kg
Acute Toxicity – Inhalation
LC_{50} rat: 38.945 ppm

Potential Health Effects

Health Effects

Inhalation:	Harmful and likely to cause adverse effect by this route.
Skin contact:	Not classified as skin irritant or sensitise.
Eye contact:	Not classified as eye irritant
Ingestion:	Very toxic if swallowed.

Other Information
Reproductive and teratogenic effects are unlikely in human under normal conditions. No data available on carcinogenic effects.

SECTION 12 – ECOLOGICAL INFORMATION

Acute Toxicity – Fish
LC_{50}: 9.7 x 10^{-3} ppm (96 h); rainbow trout
LC_{50}: 0.430 mg/L (96 h); carp
Acute Toxicity – Aquatic Invertebrate
EC_{50}: 0.2 mg/L (24 h); Daphnia
Environmental Fate, persistence and degradability, mobility
Aluminium phosphide breaks down spontaneously in the presence of water to form a gaseous product, so it is non-persistent and non-mobile in soil environment. Thus possess no risk to groundwater.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal: Instructions concerning the disposal of this product and its containers are given on the product label. These should be carefully followed.

SECTION 14 – TRANSPORT INFORMATION

ADG

UN Number:	1397
Proper shipping name:	ALUMINIUM PHOSPHIDE
Class:	4.3 Substances which in contact with water emit flammable gases
Sub Risk:	6.1 Toxic substances
Packaging group:	I
Hazchem:	4W

IMO-IMDG

UN Number:	1397
Proper shipping name:	ALUMINIUM PHOSPHIDE
Class:	4.3 Substances which in contact with water emit flammable gases
Sub Risk:	6.1 Toxic substances
Packaging group:	I
Marine pollutant	Yes

SECTION 15 – REGULATORY INFORMATION

SUSMP Classification	S7
Packaging & Labelling	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING

SECTION 16 – OTHER INFORMATION

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS number	Chemical Abstracts Service Registry Number
Hazchem Number	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOHSC	National Occupational Health and Safety Commission
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons

UN Number	United Nations Number
GHS	Globally Harmonised System

CONTACT POINT:

Police and Fire Brigade:	Dial	000
National Poisons Information Centre:	**Dial**	**13 11 26 (from anywhere in Australia)**
For 24 hour emergency response:	Dial	1800 951 288 03 9573 3188