

## DIRECTIONS FOR USE

### RESTRAINTS:

**DO NOT** apply when the temperature within the commodity or at the site of pest activity to be fumigated is below 5° C.  
**DO NOT** connect cylinders to introduction equipment until all fumigation warning signs have been posted and the space to be fumigated is cleared of people, non-target animals and secured.  
**DO NOT** fumigate processed cereal commodities.  
**DO NOT** use on any commodity, empty containers, rail cars or other transportation vehicles that are in transit or likely to be in transit during exposure or ventilation.

**Rate of Use:** For all situations, the ZYTHOR Applicator's Manual and ZYTHOR Fumicalc™ must be used to determine the appropriate dose for all fumigations. For the fumigation of structures containing food commodities, the maximum use rate is 1500 g-h/m<sup>3</sup> CTP.  
 Do not exceed a maximum concentration of 128 g/m<sup>3</sup>.

Situations	Pests
<b>Dwellings</b> (including mobile homes) <b>Buildings</b> <b>Construction materials, timber and logs</b> <b>Furnishings</b> (household effects) <b>Shipping containers</b> (including those containing pallets, machinery and non-food items) <b>Vehicles</b> (including cars, buses, surface ships, rail cars and recreational vehicles but excluding aircraft)	Existing infestations of rodents and insects such as borers, bed bugs, cockroaches, clothes moths, carpet beetles and drywood termites.
<b>Commodity storage and non-residential structures NOT containing food commodities</b> including food handling and processing facilities, pet food facilities, mills, warehouses, silos, stationary transportation vehicles (railcars, trucks etc., excluding aircraft and passenger railcars), temporary and permanent fumigation chambers.	All life stages of stored product pests including: Indian meal moth ( <i>Plodia interpunctella</i> ), Mediterranean flour moth ( <i>Ephestia kuehniella</i> ), confused flour beetle ( <i>Tribolium confusum</i> ), rust red flour beetle ( <i>Tribolium castaneum</i> ), warehouse beetle ( <i>Tragoderma variable</i> ), saw-toothed grain beetle ( <i>Oryzaephilus surinamensis</i> ), dried fruit moth ( <i>Ephestia cautella</i> ), drugstore beetle ( <i>Stegobium paniceum</i> ), tobacco beetle ( <i>Lasioderma serricorne</i> ), hide beetle ( <i>Dermestes maculatus</i> ), grain weevil ( <i>Sitophilus granarius</i> ), rice weevil ( <i>Sitophilus oryzae</i> ), rusty grain beetle ( <i>Cryptolestes ferrugineus</i> ) and lesser grain borer ( <i>Rhyzopertha dominica</i> ) Note: Not all seed varieties have been tested for viability following fumigation. Refer to Ensysstex for specific advice (ZYTHOR@Ensysstex.com)
<b>Commodity storage structures (as listed above) containing the following food commodities only:</b> <b>Cereal grains</b> e.g. barley, corn or maize, millet, oat, popcorn, rice, sorghum, spelt, triticale, wheat, wild rice and polished rice. <b>Dried fruits</b> e.g. apricots, dates, figs, prunes, raisins and sultanas. <b>Nuts</b> e.g. almonds, beech nuts, brazil nuts, cashews, chestnuts, hazel nuts, hickory nuts, macadamias, peanuts, pecans, pine nuts, pistachios and walnuts. <b>Baled hay</b> for animal feed and <b>pet food</b> .	
<b>Seed storage facilities</b> holding seeds of additional plant varieties stored for propagation purposes only (i.e. NOT intended for human consumption).	

**CRITICAL COMMENTS:** The ZYTHOR Applicator's Manual and the ZYTHOR Fumicalc contain important information for the safe and effective use of this product. They must be used and must be in the user's possession during fumigation. Most fumigation can be achieved at much lower rates than the maximum.  
 The ZYTHOR Fumicalc, a PC-based computer program, should be used to calculate the required dosage and the amount of ZYTHOR needed specific to the situation. You must be trained under the Ensysstex ZYTHOR Training and Stewardship Plan in order to access the ZYTHOR Fumicalc. If the ZYTHOR Applicator's Manual is lost or access to the ZYTHOR Fumicalc program has expired, contact your ZYTHOR distributor or Ensysstex representative to obtain a replacement copy.

## Fumigations for Quarantine and pre-shipment (QPS)

Situations	Pests	Rates	Critical Comments
Australian Government Department of Agriculture, Water and the Environment (DAWE) Fumigations for Quarantine and Pre-shipment (QPS) purposes.	Brown marmorated stink bug (BMSB) ( <i>Halyomorpha halys</i> )	24 g/m <sup>3</sup> or above, at 10° C or above, for a minimum of 12-hours (but less than 24-hours), and a minimum end point reading of 12 g/m <sup>3</sup> ; OR 24 g/m <sup>3</sup> or above, at 10° C or above, for 24-hours or longer, and a minimum end point reading of 8 g/m <sup>3</sup> .	All fumigations to be performed in accord with DAWE sulfuryl fluoride fumigation methodology requirements.

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

**WITHHOLDING PERIOD:**  
 Allow a minimum of 24 hours after fumigation has ceased before releasing treated commodities for human consumption.

**GENERAL INFORMATION**  
 ZYTHOR is a hazardous material and should be used only by licensed fumigators trained under the Ensysstex ZYTHOR Training and Stewardship Plan.

The release of high-pressure fumigant can be forceful and there is potential for personal injury. Care must be exercised when fumigating, especially tarped commodities, so that the fumigant is not released too rapidly and 'balloons' the tarp off the restraining sand or water snakes. A fog-out can also occur if the fumigant is released too rapidly, cooling the air temperature below the dew point. The rapid discharge of ZYTHOR through introduction equipment will result in cooling parts of the equipment and the cylinders. Contact with the cooled equipment can cause frostbite. When used for fumigation of enclosed spaces, such as houses and other structures, warehouses, silos, bunkers, vaults, chambers, trucks, vans, rail cars, ships and other transport vehicles, two persons trained in the use of this product, one of whom is licensed by the competent state authority, must be present during introduction of the fumigant, re-entry prior to aeration, and during the initiation of the initial aeration procedure. Two persons need not be present if monitoring is conducted remotely (i.e. outside the area being fumigated).

**Use of warning agent:** Chloropicrin is a warning agent that can be introduced into a structure during fumigation only where relevant to avoid direct exposure to ZYTHOR. Chloropicrin may be released into a building at least 5 to 10 minutes prior to introduction of ZYTHOR in situations where there is a high risk of persons inadvertently remaining in, or entering into, a fumigated building. To introduce the warning agent, place a handful of a wicking agent (e.g. cotton) in a shallow chloropicrin evaporation container (e.g. dish). Do not use containers or application equipment made of magnesium, aluminium or their alloys, as chloropicrin may be severely corrosive to such metals. To enhance the distribution of chloropicrin throughout the structure, place the container in the air stream of a fan. Pour chloropicrin over the wicking agent. Dispense no more than 30 mL for 425 m<sup>3</sup> of space to be fumigated. Establish at least one chloropicrin site for every 1,275 m<sup>3</sup> of space to be fumigated.

Chloropicrin need not be used when fumigating rail cars; however, a walk-through inspection must be performed of each rail car with doors being immediately locked upon leaving each car, and a guard must be posted during fumigation introduction, exposure period and aeration.

Chloropicrin is a warning agent that causes stinging of the eyes, tears and discomfort, and has a very disagreeable pungent odour at very low concentrations. Chloropicrin must be only used by a person certified to apply ZYTHOR, or under their supervision. Fumigators must observe the precautionary statements and safety recommendations appearing on the label of this product.

### Insecticide Resistance Warning

**GROUP 8C INSECTICIDE**

For insecticide resistance management ZYTHOR Gas Fumigant is a Group 8C insecticide. Some naturally occurring insect biotypes resistant to ZYTHOR Gas Fumigant and other Group 8C insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if ZYTHOR Gas Fumigant or other Group 8C insecticides are used repeatedly. The effectiveness of ZYTHOR Gas Fumigant on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Ensysstex Australasia Pty Ltd accepts no liability for any losses that may result from the failure of ZYTHOR Gas Fumigant to control resistant insects.

ZYTHOR Gas Fumigant may be subject to specific resistance management strategies. For further information contact Ensysstex Australasia Pty Ltd or your local agricultural department agronomist.

### PRECAUTIONS

**Do not** apply fumigant directly onto any surface that may react with ZYTHOR.  
**Do not** use this product without the ZYTHOR Fumicalc™ for ZYTHOR. The ZYTHOR Fumicalc is a computer program available to calculate safe and effective levels of ZYTHOR for fumigating structures and commodities. Carefully read the label and the ZYTHOR Applicator's Manual before using this product. Extinguish all flames including pilot lights of furnaces, hot water heaters, dryers, gas

refrigerators, ranges, ovens, broilers and open flames. Turn off or unplug all electric heating elements such as those in heaters, dryers etc.  
 Shut off automatic switch controls for appliances and lighting systems that will be included in the space to be fumigated. Contact your local gas company to determine what procedures should be followed in your area for shutting off natural gas or propane service. Gas service should be shut off at the main service valve. ZYTHOR Gas Fumigant can also react with strong bases such as some photo developing solutions.

**Never** allow untrained individuals to use ZYTHOR.

**Walk through of areas to be fumigated & securing structure entrances**

Where the structure or situation allows, a thorough walk-through inspection of areas to be treated must be performed immediately prior to the introduction of the fumigant with all entrances being locked upon leaving. The fumigator must secure the structure against unauthorised entry during fumigation by using a locking device or by establishing a barricade on all exterior doors, doorways or access points. A locking device or barricade must be demonstratively effective in preventing entry to the fumigated area through exterior doors, doorways or access points by anyone other than the certified applicator in charge of the fumigation or persons under their direct supervision.

**Notify appropriate owners, employees, and/or operators** at the facility where the fumigation will occur. All entrances and all sides of the fumigated structure or fumigated space must have warning signs (see below):

**Posting (Signage) of Fumigated Areas:**

The applicator must post all entrances to the fumigated areas with signs showing:

1. The SKULL and CROSSBONES symbol.
2. The statement, "Area under fumigation, DO NOT ENTER".
3. If required, the date of fumigation.
4. Name of fumigant used.
5. Name, address and telephone number of the applicator.

Only a licensed fumigator may authorise the removal of placards and the structure must remain posted for fumigation until clear for re-entry when the concentration of ZYTHOR in the treated site is 3 ppm or less. The concentrations of ZYTHOR Gas Fumigant must also be monitored in breathing zones outside the structure as appropriate.

No one should be in treated areas if the level of ZYTHOR Gas Fumigant is above 3 ppm unless provided with an approved, positive pressure self-contained breathing apparatus (SCBA) or combination air supplied/SCBA respirator. Since the approved clearance devices give immediate readings, respiratory protection is not required when cleaning with these instruments after having completed the initial aeration procedure. However, if a reading indicates levels in excess of 3 ppm, leave the affected area immediately.

### Re-entry

Do not allow entry into the treated structures until the concentration of ZYTHOR Gas Fumigant is confirmed to be less than 3 ppm, measured with an approved detection device. For structures containing commodities, ensure that the concentration of ZYTHOR Gas Fumigant is less than 3 ppm in the structure before removing the fumigated commodity.

**If required to enter into the fumigated area during the aeration procedure, approved respiratory protection must be worn until concentration of ZYTHOR is confirmed not to exceed 3 ppm with an approved detection device.** No one shall be in fumigated and/or risk areas if the level of ZYTHOR is above 3 ppm unless wearing an approved positive pressure self-contained breathing apparatus (SCBA) or combination air supplied/SCBA respirator.

However, once the initial aeration procedure has been undertaken, use of an approved full facepiece respirator with combined dust and gas cartridge may be used if in the treatment area for short periods. Once the concentration is confirmed to be less than 3 ppm, the structure is cleared for immediate re-entry.

**Note 1:** Only an approved detection device of sufficient sensitivity (LOD <1 ppm) can be used to confirm a concentration of ZYTHOR of 3 ppm or less. Such devices must be calibrated according to manufacturer recommendations. Refer to the ZYTHOR Applicator's Manual for further guidance on detection devices.

**Note 2:** Before using any make or brand of SCBA, learn how to use it correctly. Determine that it is in good working order, has an adequate air supply for the job at hand, fits properly, and provides an adequate seal around the face.

**POISON**  
**KEEP OUT OF REACH OF CHILDREN**  
**READ SAFETY DIRECTIONS BEFORE OPENING OR USING**

**ZYTHOR**  
**GAS FUMIGANT**

**ACTIVE CONSTITUENT:**

**998 g/kg SULFURYL FLUORIDE**

**GROUP 8C INSECTICIDE**

For the control of insects and rodents in buildings (commercial and residential), timber, construction materials, furnishings, shipping containers and vehicles (excluding aircraft) and for the control of stored product pests in storage facilities such as silos or warehouses, in fumigation chambers, food handling and commodity processing facilities as specified in the Directions for Use table.

For use only by licensed fumigators trained under Ensysstex's Fumigation Program.



**Net Contents:**  
**56.5 kg**

**Ensysstex Australasia Pty Ltd**

ABN 53 102 221 965  
 Unit 3 The Junction Estate  
 4-6 Junction Street Auburn NSW 2144  
[www.Ensysstex.com.au](http://www.Ensysstex.com.au)

**CUSTOMER SERVICE / EMERGENCY RESPONSE (ALL HOURS)**  
 13 35 36

APVMA Approval No: 89677 / 132627

### Leak Procedures

Evacuate immediate area of leak. Use an approved positive pressure self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator for entry into affected areas to correct problem.  
 Move leaking or damaged cylinder outdoors or to an isolated location, observing strict safety precautions. Work upwind if possible. Do not permit entry into leakage area by unprotected persons until concentration of fumigant is determined to be 3 ppm or less, as determined by an approved detection device with sufficient sensitivity.

### Additional Precautions and Safety Information

Do not wear gloves or rubber boots when applying the fumigant. Do not reuse clothing or shoes that have become contaminated with liquid ZYTHOR until thoroughly aerated. Wear loose fitting or well-ventilated long-sleeve shirt, long pants, shoes and socks.  
 In all cases of overexposure, when symptoms such as nausea, difficulty in breathing, abdominal pain, slowing of movements and speech, or numbness in extremities are exhibited, get medical attention immediately. Take person to a doctor or emergency treatment facility.

### Transportation of Cylinders

**Do not** transport cylinders in closed vehicles where the same common airspace is occupied by personnel. On public roads transport only when secured in an upright position.  
**Do not** use rope slings, hooks, tongs, or similar devices to unload cylinders.  
**Do not** remove the valve protection bonnet and safety cap until immediately before use.  
 When cylinder is empty, close valve, screw safety cap onto valve outlet, and replace protection bonnet before returning to supplier. ZYTHOR cylinders must never be transported by aircraft under any circumstances.

### PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

ZYTHOR Gas Fumigant is a highly toxic gas. Do not expose non-target organisms. This pesticide is toxic to fish and wildlife. To the extent possible, rodent carcasses should be recovered following fumigation and be destroyed by burning or burial according to the requirements of the State or Territory in which use has occurred.

### STORAGE AND DISPOSAL

**Storage:**  
 Store in a dry, cool, well-ventilated, secured and locked area. Storing indoors in occupied areas in buildings is not recommended. ZYTHOR cylinders are under pressure and must not be stored near heat or open flame. Exposures to temperatures above 70 °C will cause a fusible plug to melt and the contents will be released. Store cylinders upright; secured to a rack or wall to prevent tipping. Cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging or sliding. Do not store near food, feedstuffs, fertilisers or seed.

### Disposal:

Empty cylinders MUST be returned to your supplier. DO NOT use cylinders for any other purpose. Follow proper cylinder handling directions above. Cylinders remain the property of Ensysstex.

### SAFETY DIRECTIONS

Direct contact with liquid may cause irreversible eye damage and/or freeze burns on exposed skin. Wear splash resistant goggles or full-face shield when handling the liquid product during introduction of fumigant or when working around any lines containing fumigant under pressure. Harmful if inhaled. Do not inhale vapour. If required to enter into a fumigated area, an approved positive pressure self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator must be worn until concentration of ZYTHOR is confirmed not to exceed 3 ppm with an approved detection device.

### FIRST AID INSTRUCTIONS

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 11 26, New Zealand 0800 764 766.

### SAFETY DATA SHEET

Additional information is listed on the Safety Data Sheet, which is available from Ensysstex, see [www.Ensysstex.com.au](http://www.Ensysstex.com.au).

**UN 2191 SULFURYL FLUORIDE INHALATION HAZARD**



IN A TRANSPORT EMERGENCY ONLY DIAL 000 FOR POLICE OR FIRE BRIGADE

**Batch No. / Date of Manufacture:**

**L-AU-CHFZY1001 4.01 02.22**

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