UNITED ARAB EMIRATES
MINISTRY OF CLIMATE CHANGE
& ENVIRONMENT

الإمارات العربية المتحدة
وزارة التغيير المناخي
والبيئة

شهادة اعتماد الفرمونات والمواد الجاذبة والطاردة والمواد المضافة والمواد ذات التاثير الميكانيكي او الفيزيائي.

Approval Certificate of Pheromones, Attractants, Repellents , Additives (Adjuvants), Materials with mechanical or physical effect .

Sustainable Communities Sector
Municipal Affairs Department
Chemical Section

قطاع المجتمعات المستدامة
إدارة الشؤون البلدية
قسم الكيماويات

Date of Certification	4 August 2019	تاريخ إصدار الشهادة
Product name	Diathor Bed Bug Killer Aerosol	اسم المنتج
Type of Material	Repellents	نوع المادة
Manufacturer	Ensystex	اسم الشركة المنتجة
Country of origin	Australia	بلد المنشأ
Importing Comp.	Sherwood Middle East Pesticides Trading	الشركة المستوردة

For Manager Director

Eng. Yousif Alahmed Al Rayssi
Director, Municipal Affairs Department

مدير الإدارة

الأرشيف
وزارة التغيير المناخي والبيئة
MINISTRY OF CLIMATE CHANGE & ENVIRONMENT
ARCHIVES

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www.moccae.gov.ae

READ SAFETY DIRECTIONS

DIATHOR™
Bed Bug Killer
AEROSOL

ACTIVE CONSTITUENT: 12 g/kg AMORPHOUS SILICA

Controls bed bugs in urban situations

Net Contents: 250 g

Ensystex Australasia Pty Ltd
ABN 53 102 221 965
Unit 3 The Junction Estate
4-6 Junction Street AUBURN NSW 2144

www.ensystex.com.au

Ensystex New Zealand Ltd

17C Corinthian Drive
Albany AUCKLAND 0752

www.ensystex.co.nz

CUSTOMER SERVICE AND EMERGENCY RESPONSE (ALL HOURS)

13 35 36

0800 ENSYSTEX (0800 367 978)

APVMA Approval No: 70222/62764
Approved Pursuant to the HSNO ACT 1996. Approval Code: HSR 101075
Pending: MAF Approved Type B (all animal product except dairy)

DIATHOR Bed Bug Killer Aerosol kills bed bugs.

DIRECTIONS FOR USE:
Read safety directions before using. Shake can very well before use.

Bedbugs: Apply to bedsteads, bedsprings, mattresses, floor coverings, upholstered furniture, cracks in walls, behind torn wallpaper, joints in woodwork and other harbourages.

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

PRECAUTIONS:
KEEP OUT OF REACH OF CHILDREN.
EXTREMELY FLAMMABLE.

- Do not spray directly on humans, animals, exposed foods, water, food preparation areas or food utensils.
- Do not spray near the eyes or towards the face.
- Do not smoke during use.
- Do not spray near naked flame, pilot lights, heat or any incandescent material.
- Care should be taken not to spray delicate fabrics or furnishings and plastic surfaces without prior testing.

BEWARE: INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING CONTENTS CAN BE HARMFUL OR FATAL.

SAFETY DIRECTIONS
Avoid inhaling dust. When using the product wear goggles and disposable respirator.
FIRST AID
If poisoning occurs, contact a Doctor or Poisons Information Centre. Phone: Australia 131126. New Zealand 0800 764 766.

STORAGE AND DISPOSAL:
KEEP OUT OF REACH OF CHILDREN. Pressurised dispenser. Protect from sunlight and do not expose to temperatures exceeding 50°C. Keep in a cool place out of the sun. Do not puncture or incinerate can, even when empty.
Recycle empty cans if a facility is available or place used can in household rubbish.

MATERIAL SAFETY DATA SHEET
Additional information is listed in the Material Safety Data Sheet available from the supplier.

NOTICE
Ensystex warrants that this product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with Directions for Use under normal conditions of use. No warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of the product contrary to label instructions or under off-label permits not endorsed by Ensystex, or under abnormal conditions.
PROPELLANT: HYDROCARBON

Steel recycling logo

DIATHOR™

BED BUG KILLER

WITH AMORPHOUS SILICA

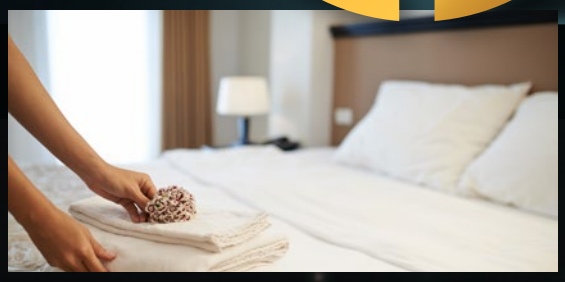
The long-lasting, pesticide-free aerosol for controlling bed bugs.

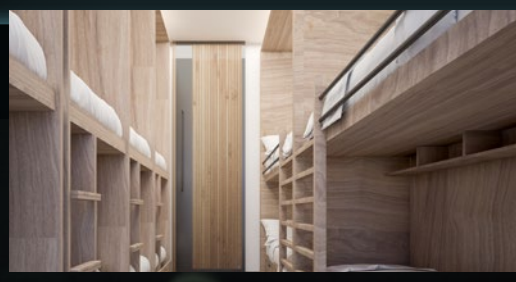
DIATHOR Bed Bug Killer contains a unique and highly abrasive grade of pyrogenic, **amorphous silica** – ideal for killing bed bugs.

- Low risk & easy to use
- Long-lasting results
- Controls resistant strains
- Tested in Australia and overseas

PHYSICAL MODE OF ACTION

DIATHOR kills bed bugs via rapid dehydration caused by breaking down the bug's waterproof exterior





MAKES BED BUGS 'DEAD BUGS'

APVMA approved for bedsteads, bedsprings, mattresses, upholstered furniture, floor coverings, cracks in walls, behind torn wallpaper, joints in woodwork, etc.

Call 13 35 36

ENSYSTEX™

LEADING INNOVATION IN PEST MANAGEMENT

www.ensystex.com.au

DIATHOR™ BED BUG KILLER

Controls Resistant Strains

One particular problem for pest managers is the lack of insecticides that have high efficacy against bed bugs, as insecticide resistance to a range of chemical classes has been identified (Lilly et al. 2009[1]). This ensures that control is a major challenge.

DIATHOR with its pesticide-free, physical mode of action, offers an effective solution against even the most resistant strains. Its mode of action limits the possibility of resistance developing due to its physical rather than chemical/metabolic mode of action.[2]

Safety in Use

Amorphous silicas have been used in a wide variety of applications, including food, cosmetics and pharmaceutical (oral and topical) products, for many decades. Based on extensive physico-chemical, ecotoxicology, toxicology, safety and epidemiology data, no environmental or health risks have been associated with these materials.

Amorphous silicas have not been shown to bioaccumulate and all disappear within a short time from living organisms by physiological excretion mechanisms.[3]

EASY TO USE:

Shake can very well before use. DIATHOR will initially leave a visible deposit, which fades quickly, leaving reduced visible impact when compared to ready-to-use dust products. It is recommended for discreet placement. If in doubt, test a small area first and leave for ten minutes.

TECHNICAL DETAILS:

Formulation: Water-based aerosol
Net weight: 250 g
Active: 12 g/kg amorphous silica

Tested in Australia and Overseas [4]

DIRECT SPRAY TRIAL

For this trial the bed bugs were sprayed directly with DIATHOR.

BED BUG STRAIN	MORTALITY		
	1 DAY	2 DAYS	3 DAYS
Highly insecticide-resistant strain	70%	99%	100%
Susceptible strain	100%		

RESIDUAL PERFORMANCE TRIAL

DIATHOR was applied as a surface deposit and the bed bugs were later released on the surface. DIATHOR does not provide quick kill, but full control was achieved within 9 days on all strains. The speed of kill was notably faster than diatomaceous earth products, which typically take up to 14 days to achieve mortality.

Due to the physical nature of DIATHOR, the surface residual deposits will remain highly-effective for as long as the particles remain in place. In cracks and crevices, control for up to a year can be expected, in other environments control for up to 3 months is realistic.

BED BUG STRAIN	MORTALITY			
	4 DAYS	5 DAYS	8 DAYS	9 DAYS
Highly insecticide-resistant strain	88%	98%	100%	
Susceptible strain	88%	98%	98%	100%

1. Lilly G.D., Doggett S.L., Zalucki M.P, Orton C.J. and Russell R.C. (2009). Bed bugs that bite back, confirmation of insecticide resistance in the common bed bug, *Cimex lectularius*. Professional Pest Manager, 13(5): 22-24.
2. Ebeling, W. (1971). Sorptive dusts for pest control. Ann. Rev. Entomol. 16:123-158.
3. Fruijtier-Pölloth, C. (2012). The toxicological mode of action and the safety of synthetic amorphous silica—A nanostructured material. Toxicology, 294:61-79.
4. Regulatory trials performed by Thailand Food & Drug Administration, Department of Medical Entomology, against *Cimex hemipterus* Fabricius; and, Department of Medical Entomology, Institute of Clinical Pathology & Medical Research, NSW Department of Health, against *Cimex lectularius* Linnaeus.

ENSYSTEX™
LEADING INNOVATION IN PEST MANAGEMENT

ENSYSTEX AUSTRALASIA PTY LTD
Unit 3 The Junction Estate,
4-6 Junction Street, Auburn NSW 2144
www.ensystex.com.au
CUSTOMER SERVICE 13 35 36

ENSYSTEX NEW ZEALAND LTD
17C Corinthian Drive, Albany,
Auckland 0752
www.ensystex.co.nz
Tel: 0800 ENSYSTEX (0800 367 978)

BRODA1000 1.01 02.19

Section 1 - Identification of The Material and Supplier

Ensystex Australasia Pty Ltd
Unit 3, The Junction Estate
AUBURN, NSW 2144
13 35 36 (all hours)

Ensystex New Zealand Ltd
17C Corinthian Drive
Albany, Auckland 0752
0800 ENSYSTEX (0800 367 978)

Chemical nature: Hydrophobic silicate.

Trade Name: **DIATHOR™ Bed Bug Killer Aerosol**

Product Code: Australia APVMA: 70222 New Zealand HSR Approval: HSR101075

Product Use: Ready-to-use insect Aerosol.

Creation Date: **October, 2014**

This version issued: **January, 2019** and is valid for 5 years from this date.

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: Hazardous according to the criteria of SWA.

Risk Phrases: R12 Extremely Flammable.
Safety Phrases: S2, S23, S25. Keep out of reach of children. Do not breathe spray. Avoid contact with eyes.
SUSMP Classification: Exempt.
ADG Classification: Classified as Dangerous Goods by the criteria of the ADG Code.
UN Number: 1950 2.1

GHS Signal word: DANGER

HAZARD STATEMENT:
- H222: Extremely flammable aerosol.
- H333: Maybe harmful if inhaled.

PREVENTION
- P102: Keep out of reach of children.
- P210: Keep away from heat, hot surface, sparks, open flames and other ignition sources. – No smoking.
- P211: Do not spray on an open flame or other ignition source.
- P234: Keep only in original container.
- P251: Do not pierce or burn, even after use.
- P261: Avoid breathing spray.
- P281: Use personal protective equipment as required.

RESPONSE
- P309: If exposed or if you feel unwell, seek medical attention.
- P337: If eye irritation persists: seek medical attention.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, coarse water spray.

STORAGE
- P402: Store in a dry place.
- P410+P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

DISPOSAL
- P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & Colour: White liquid.
Odour: Mild characteristic odour.
Major Health Hazards: No significant risk factors have been found for this product. Avoid contact with eyes.

Potential Health Effects

Inhalation:
Short Term Exposure: Available data indicates that this product is not harmful. However product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.
Long Term Exposure: Long term inhalation of high amounts of any nuisance dust may overload lung clearance mechanism. No data for health effects associated with long term inhalation.

Skin Contact:
Short Term Exposure: Available data indicates that this product is not harmful. It should present no hazards in normal use.
Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:
Short Term Exposure: Spray from product may cause mechanical irritation if it gets in eyes.
Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:
Short Term Exposure: This product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.
Long Term Exposure: No data for health effects associated with long term ingestion.

Carcinogen Status:
SWA: No significant ingredient is classified as carcinogenic by SWA.
NTP: No significant ingredient is classified as carcinogenic by NTP.
IARC: No significant ingredient is classified as carcinogenic by IARC.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc,%	TWA (mg/m^3)	STEL (mg/m^3)
Amorphous silica	68909-20-6	1.2	not set	not set
Propane/Butane Propellant Blend	68476-85-7	20-40	not set	not set
Inert solvent	various	>60	not set	not set

This is a commercial product whose exact ratio of components may vary slightly.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:
You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 11 26 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: No first aid measures normally required. However, if inhalation has occurred, and irritation has developed, remove to fresh air and observe until recovered. If irritation becomes painful or persists more than about 30 minutes, seek medical advice.
Skin Contact: Gently brush away excess particles. Irritation is unlikely. However, if irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until product is removed.
Eye Contact: Quickly and gently brush particles from eyes. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.
Ingestion: If product is swallowed or gets in mouth, do NOT induce vomiting; wash mouth with water and give some water to drink. If symptoms develop, or if in doubt contact a Poisons Information Centre or a doctor.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: Highly flammable. There is moderate risk of an explosion from this product if commercial quantities are involved in a fire. Fire-fighters should take care and appropriate precautions. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances. AEROSOL CANS may explode at temperatures approaching 50°C.
Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.
Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is preferred for large fires. Try to contain spills, minimise spillage entering drains or water courses.
Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is full fire kit and breathing apparatus.

Flash point:	Highly flammable.
Upper Flammability Limit:	No data.
Lower Flammability Limit:	No data.
Autoignition temperature:	No data.
Flammability Class:	Highly Flammable.
Hazchem code:	2Y

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear overalls and goggles. There are no specific manufacturer recommendations for protective equipment materials. Eye/face protective equipment should comprise as a minimum, protective glasses and, preferably, goggles. If there is a significant chance that dusts are likely to build up in clean-up area, we recommend that you use a suitable Dust Mask. Otherwise, not normally necessary.
Collect spilt product into labelled containers for recycling and dispose of promptly. Recycle containers wherever possible when empty. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal.

Section 7 - Handling and Storage

Handling: Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.
Storage: This product is not a Scheduled Poison. Keep containers dry and away from water. Store in the closed original container in a dry, well-ventilated area. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	**TWA (mg/m^3)**	**STEL (mg/m^3)**

Exposure limits have not been established by SWA for any of the significant ingredients in this product.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.
Ventilation: No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts are minimised.
Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.
Skin Protection: The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary.

Protective Material Types: There is no specific recommendation for any particular protective material type.
Respirator: If there is a significant chance that dusts are likely to build up in the air use a P2 dust mask. Otherwise, not normally necessary.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	White liquid spray.
Odour:	Mild characteristic.
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data.
Volatiles:	>60%.
pH:	>9.
Coeff Oil/water Distribution:	No data.
Autoignition temp:	No data.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
Conditions to Avoid: Containers should be kept dry. Store in the closed original container in a dry, cool, well-ventilated area. Keep away from sources of sparks or ignition. Any electrical equipment in the area of this product should be flame proofed.
Incompatibilities: strong acids, strong bases.
Fire Decomposition: N/A
Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Toxicity: Amorphous silica is generally considered a nuisance dust of low toxicity. Silicon dioxide" is listed in 21 CFR (Code of Federal Regulations, USA) in § 172.480 as an "anticaking agent" in food which "may be safely used" with a limitation of <2 %. Acute toxicity studies: No mortalities were observed for the oral and inhalation studies. For the primary eye irritation study, there was no corneal opacity or iridial irritation in any of the eyes. For the dermal study, there was no dermal irritation at 72 hours. For the acute toxicity study, the oral LD50 is >5,000 mg/kg. For the acute inhalation study, the LC50 is >2.08 mg/L.
Mutagenic studies: No indication of any mutagenic activity.
Butane LC50 (Inhalation): 658 g/m^3/4 hours (rat).

Classification of Hazardous Ingredients

Ingredient	Risk Phrases

No ingredient mentioned in the HSIS Database is present in this product at hazardous concentrations.

Section 12 - Ecological Information

Amorphous silica is an inorganic water insoluble substance. For this reason its bioavailability is very low for aquatic organisms.
In acute tests according to OECD test guidelines with fish and daphnia, nominal concentrations of 1000 and 10000 mg/L respectively showed no effects. Based on the physical chemical and acute toxicological data no chronic effects and no bioaccumulation are expected in aquatic organisms. The general guidelines for the examination of the biodegradability of substances (OECD-, EEC-guidelines) can be used only for organic substances. Amorphous silica is an inert inorganic substance and will not biodegraded by microorganisms. The German commission for the evaluation of water polluting substances has classified synthetic amorphous silica as a not water endangering substance (KBwS-No: 849). Silica is also included in the OSPAR List of Substances / Preparations Used and Discharged Offshore which are Considered to Pose Little or No Risk to the Environment (PLONOR).

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 Code: Classified as a Dangerous Good by the criteria of the ADG Code.

UN number:	1950
Proper shipping name:	Aerosol, flammable
Transport hazard class:	2.1
Picking group:	None allocated
DG class:	None allocated
Subsidiary risk(s):	None allocated
Hazchem code:	2Y
EPG:	2D1

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are to be found in the public AICS Database.

Section 16 - Other Information

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

If there is any conflict between this SDS and the registered label, instructions on the label prevail.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially fire-fighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
R-Phrase	Risk Phrase
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document “Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice” (December 2011)