MATERIAL SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**Zoono Germ Fogger (Automotive)**
Formula	90023-35
Product Size:	100 ml
Product Use:	An antimicrobial that inhibits the growth of bacteria, yeast, fungi, algae and viruses on surfaces for extended periods, and eliminates odour.
New Zealand Manufacturer:	Zoono Limited
Address:	31 Hannigan Drive, St. Johns, Auckland 1072, New Zealand
Telephone:	
Emergency Telephone:	**(64) 021 657 799**

Section 2. Hazards Identification

This substance is hazardous according to the *HSNO (Minimum Degrees of Hazard) Regulations 2001*
ERMA Approval Code: HSR002530 Cleaning Product (Subsidiary hazard)

HSNO Classification	Hazard Code	Hazard Statement
6.3B	H316	Causes mild skin irritation.
6.4A	H320	Causes eye irritation.

Prevention Code	Prevention Statement
P103	Read label before use.
P264	Wash hands thoroughly after handling.
P280	Wear gloves and eye protection

Response Code	Response Statement
P332 + P313	If skin irritation occurs: Get medical advice/ attention
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Disposal Code	Disposal Statement
P501	Do not reuse empty containers. Triple rinse and then recycle.

Section 3. Composition / Information on Ingredients

Active Ingredients	Wt%	CAS NUMBER.
Liquid petroleum gas	30- 40%	68475-59-2
Ethyl alcohol	50-60%	64-17-5
Octadecylaminodimethyltrihydroxysilyl propyl ammonium chloride	0.6- 0.7%	27668-52-6

Section 4. First Aid Measures

Recommended on site emergency facilities:
Routes of Exposure:

If in Eyes	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing holding the eyelids open If eye irritation continues seek medical advise or attention.
If on Skin	Remove contaminated clothing and wash skin Thoroughly with soap and water. Seek medical attention if skin is irritated.
If Swallowed	Never give anything by mouth to an unconscious person. Induce vomiting. Rinse mouth. Give about 500 ml of milk followed by plenty of water to be sipped slowly.
If Inhaled	Not a likely route of exposure

Section 5. Fire Fighting Measures and Hazards

There is a moderate risk of an explosion from this product if it is involved in a fire. Firefighters should take care and appropriate precautions.

UN No :	1950
Dangerous Goods Class :	2.1 Flammable Gas
Sub Risk Class :	None allocated
Packaging Group :	3
Poisons Schedule :	not scheduled
Flashpoint:	Not available
Flammability Limits:	Not available
Extinguishing Media:	Carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires.
Special “Fire Fighting procedures:	If a significant quantity of this product is involved in a fire, call the fir brigade. Immediately evacuate the area of unnecessary personnel. When fighting fires involving significant quantities of this product, wear safety boots, non-flammable overalls, gloves, hat, goggles and self contained breathing apparatus. All skin areas should be covered. Ensure that no spillage enters drains or water courses.
Unusual Fire & Explosion Hazards:	Fire decomposition products from this product may form toxic mixtures in confined spaces. Vapours from this product are heavier that air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.
Stability:	This product is unlikely to spontaneously decompose.
Polymerisation:	This product is unlikely to spontaneously polymerise.
Decomposition Products:	Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water.
Materials to avoid:	Strong oxidising agents.
Hazards from decomposition products :	None

Note: this product is classed as a Dangerous Good. We suggest you consult your Dangerous Goods laws in order to clarify your obligations regarding the storage of this product.

Section 6. Accidental Release Measures

Land Spill or Leaks Wipe, Soak up in an inert material and put in a container for disposal. Wear proper protective equipment. Warn other workers of spill.
In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. As a minimum, wear overalls, goggles and gloves. Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiclite or other suitable absorbent material. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details

regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Dispose of only in accord with all regulations

Section 7. Handling and Storage

Approved Handlers Not Required
Precautions for safe handling: No special precautions
Conditions for safe storage: Store in original tightly closed above 0 ^{o}C and below 30^{o}C in a secure area inaccessible to children and away from food or feed. Keep container closed when not in use. Avoid contact with eyes

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	CAS # (a)	TWA ppm(b)	TWA mg/m3(c)	STEL ppm(b)	STEL mg/m3(c)
3-(trimethoxysilyl) propyldimethyl octadecyl ammonium chloride	27668-52-6	Not found			Not found
Ethanol	64-17-5				

Workplace Exposure Standard – Time Weighted Average (WES-TWA).The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply.

Engineering Controls: For Industrial use. Eyewash stations must be available
In industrial situations, concentration values below the TWA value should be maintained. Values may be reduce by process modification, use of local exhaust ventilation, capturing substance at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify the process or environment to reduce the problem.

Personal Protective Equipment: The following instructions are meant for people coming into frequent and lengthy contact with this product in industrial situations, or when packages are broken or faulty. For domestic use, no special precaution or special clothing is usually required.
Respiratory Protection: It is usually safe to not use a dust mask or respirator protection on account of this product. However, if the product is being used in dusty or confined conditions, use of a mask or respirator may be preferred. For help in selecting suitable equipment, consult AS/NZS 1715.
Protective Gloves: Protective gloves are not normally necessary when using this product. However, it is always prudent to wear gloves. For help in selecting suitable equipment, consult AS2161.
Eye Protection: Protective eyewear is not normally necessary when using this product. However, it is always prudent to use protective eyewear. Consult AS1336 and AS/NZS 1337 for advice on Industrial Eye Protection.
Clothing: this product is essentially safe to use without special protective clothing. However, its use is recommended as a good industrial practice. Consult AS2919 for advice on Industrial Clothing.
Safety Boots: wearing safety boots in industrial situations is advisory. Consult AS/NZS2210 for advice on Occupational Protective Footwear.
Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Section 9 Physical and Chemical Properties

Physical State:	Liquid aerosol
Colour:	Clear
Odour:	Slight
pH:	Approximately 7
Solubility:	Soluble in water. Insoluble in petroleum solvents
Relative Vapour Density (air=1)	>1
Boiling point:	100^{O}C
Freezing Point:	-100 ^{O}C
Melting Point:	Not applicable
Appearance & Odour :	Clear colourless liquid. Mild odour..
Melting/softening point :	No specific data. Liquid at normal temperatures.
Boiling point and vapour pressure:	Not available.
Volatile materials:	Slowly volatile at 100C, but > 99% volatile at higher temperatures.
Flashpoint:	Not available
Flammability limits:	Not available
Specific gravity:	0.8
Solubility in water:	Insoluble.
Corrosiveness:	Not corrosive
Vapour Pressure:	No data.
Evaporative rate	As for ethanol.

Section 10. Stability and Reactivity

Chemical Stability	Stable
Conditions to Avoid	Strong acids and alkalis
Incompatibility	Anionic Materials
Hazardous Decomposition Products	Carbon Monoxide, Carbon Dioxide, Silicone Dioxide

Section 11 Toxicological Information

Acute Oral Toxicity	LD_{50} Rat (oral) 12, 300 mg/kg
Acute Dermal Toxicity	LD_{50} Rabbit (dermal) 7,950 mg/kg
Chronic Effects	No studies yet available

Section 12. Ecotoxicological Information

HSNO Classifications:	Skin irritant 6.3B, eye irritant 6.4A
Environmental Precautions	This product is not hazardous to the environment

Section 13. Disposal Considerations

Do not reuse empty containers. Triple rinse and then recycle.

Section 14 Transport Information

Classified as a dangerous good for Road, Rail Marine and Air Transport. UN 1950, DG 2.1 Flammable gas.

This product is classed as UN1950, Dangerous Goods Class 2.1 Flammable gases. Proper shipping name is AEROSOLS. Class 2.1 Flammable gases shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids) (where both flammable liquids and flammable gases are in bulk), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.2 (Non-flammable Non-Toxic gases), 3 (Flammable liquids except where both flammable liquids

and flammable gases are in bulk), 6 (Toxic Substances), 8 (Corrosive Substances) 9 (Miscellaneous dangerous goods), Foodstuffs and foodstuff empties. Not a Scheduled Poison. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames, and make sure that the product does not come into contact with substances above.

Section 15 Regulatory Information

ERMA Approved Code:

HSNO Controls: A maximum of 1 litre only of this product may be carried on a passenger service vehicle e.g. buses or taxis.
The package must withstand a drop of 0.5m onto a hard surface without losing its ability to retain its contents.
The package must be leak proof when the package is held at its lowest point for 30 minutes.
If the packages do not comply with the above the maximum quantity per packing unit is 450 litres.
Packaging <2.5 litres for sale to the public must be child resistant.

Section 16 Other Information

1. HSNO Approved Code of Practice: Preparation of Safety Data Sheets, September 2006.

Disclaimer : This document has been compiled by Zoono Limited, 31 Hannigan Drive, St. Johns, Auckand 1072, New Zealand and serves as the manufacturer's Material Safety Data Sheet ('MSDS'). It is based on information concerning the product which has been provided to Zoono Ltd by the contract manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. While Zoono Ltd has taken all due care to include accurate and up-to-date information in this MSDS, it does not provide any warranty as to accuracy or completeness, as far as lawfully possible.

Please contact the Manufacturer: (64) 9 600 1188 if further information is required.

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