SAFETY DATA SHEET

Section 1 - Identification

Product identifier **Thimet® 100G Systemic Granular Insecticide**

Other means of identification

Product registration number	33071
SDS No.	337

Recommended use of the chemical and restrictions on use

Recommended use	Organophosphate insecticide.
Restrictions on use	See product label for restrictions. Keep out of the Reach of Children!

Details of manufacturer or importer

Manufacturer

Company name	AgNova Technologies Pty Ltd	
Address	Unit 4, 482 Kingsford Smith Drive Hamilton, Queensland 4007 Australia	
Telephone	AgNova Technologies Pty Ltd	03 9899 8100 (office hours)
Website	agnova.com.au	
E-mail	info@agnova.com.au	
Emergency phone number	IXOM ERS	1800 033 111 (24 hours)
	Poisons Information Centre	13 11 26

Section 2 - Hazard(s) identification

Classification of the hazardous chemical

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 2
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 1
	Serious eye damage/eye irritation	Category 2B
	Carcinogenicity	Category 1A
	Specific target organ toxicity following repeated exposure (inhalation)	Category 2 (lungs)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements, including precautionary statements

Hazard symbol(s)

Skull and crossbones | Health hazard | Environment

Signal word Danger

Hazard statement(s)

Fatal if swallowed.
Toxic in contact with skin.
Fatal if inhaled.
Causes eye irritation.
May cause cancer by inhalation.
May cause damage to organs through prolonged or repeated exposure by inhalation.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe dust.
Do not get in eyes, on skin, or on clothing.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
Wear respiratory protection.
Avoid release to the environment.
Wash thoroughly after handling.

Response

Specific treatment is urgent (see this label).
IF SWALLOWED: Immediately call a POISON CENTRE/doctor.
Rinse mouth.
IF ON SKIN: Wash with plenty of water.
Take off immediately all contaminated clothing and wash it before reuse.
Call a POISON CENTRE/doctor if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTRE/doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF exposed or concerned: Get medical advice/attention.
Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental information

This is a pesticide product registered in Australia under the Australian Pesticides and Veterinary Medicines Authority (APVMA) and is subject to certain labeling requirements. These requirements may differ from the classification criteria and hazard information required for GHS compliant safety data sheets (SDS), and for workplace labels of non-pesticide chemicals.

Other hazards which do not result in classification

None known.

Section 3 - Composition and information on ingredients

Mixture

Identity of chemical ingredients	CAS number and other unique identifiers	Concentration of ingredients
Phorate Thimet® O,O-Diethyl S-(ethylthio)methylphosphorodithioate	298-02-2	100 g/kg
Inert Ingredients (May contain clay which may contain >0.1% crystalline silica)	N/A	to 100%

Section 4 - First aid measures

Description of necessary first aid measures

Inhalation

Move to fresh air. If breathing stops, provide artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control centre immediately.

Skin contact

Remove contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Call a poison centre or doctor/physician if you feel unwell.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison centre immediately. Rinse mouth thoroughly. Do not induce vomiting without advice from poison control centre. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Personal protection for first-aid responders	If exposed or concerned, call The Poisons Information Centre. 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. First aider: Pay attention to self-protection. Keep victim under observation.
Symptoms caused by exposure	Causes eye irritation. Acute cholinesterase depression may be evidenced by headache, nausea, vomiting, diarrhea, abdominal cramps, excessive sweating, salivation and tearing, constricted pupils, blurred vision, tightness in chest, weakness, muscle twitching and confusion; in extreme cases unconsciousness, convulsions, severe respiratory depression and death may occur. Repeated exposures to small doses of organophosphates may lower the cholinesterase to levels where the above symptoms of acute overexposure are observed.
Medical attention and special treatment	Treat symptomatically. Keep victim under observation. Symptoms may be delayed. This product is an Organophosphate (OP) Insecticide. Do not handle the patient without the following protective equipment in place: chemical resistant gloves and apron (preferably nitrile). Remove contaminated clothing and do not reuse without thorough cleaning with detergent and hot water. Dispose of heavily contaminated clothing, including shoes, as a hazardous waste. Do not wait for laboratory confirmation to treat patients with strong clinical evidence of poisoning. Contact your local or national poison control centre for more information. Establish airway and oxygenation. IV Atropine sulphate is the antidote of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic stimulation, Atropine sulphate should be injected at 10 minute intervals in doses of 1 to 2 milligrams until complete atropinisation has occurred. Pralidoxime chloride (2-PAM chloride) may also be used as an effective antidote in addition to and while maintaining full atropinisation. In adults, an initial dose of 1 gram of 2-PAM should be injected, preferably as an infusion, in 250 cc of saline over a 15 to 20 minute period. If this is not practical, 2-PAM may be administered slowly by intravenous injection as a 5% solution in water over not less than 2 minutes. After about an hour, a second dose of 1 gram of 2-PAM will be indicated if muscle weakness has not been relieved. For infants and children, the dose of 2-PAM is 0.25 grams. Avoid morphine, aminophylline, phenothiazine, reserpine, furosemide and ethacrynic acid. Clear chest by postural drainage. Oxygen administration may be necessary. Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may, without warning, cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been attained as determined by a blood test. Bathe and shampoo contaminated skin and hair. If ingested, empty stomach; activated charcoal is useful to further limit absorption. If victim is alert, Syrup of Ipecac (2 tablespoons in adults, 1 tablespoon in small children) is indicated. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

Section 5 - Firefighting measures

Extinguishing media

Suitable extinguishing equipment	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO_2).
Unsuitable extinguishing equipment	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. In the event of fire, cool tanks with water spray. Water runoff can cause environmental damage.
Hazchem code	2X
General fire hazards	No unusual fire or explosion hazards noted.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.

Section 6 - Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Keep upwind. Avoid inhalation of dust.
For emergency responders	Keep unnecessary personnel away. Ensure adequate ventilation. Keep upwind. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Local authorities should be advised if significant spillages cannot be contained.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Methods and materials for containment and cleaning up	Wear appropriate protective equipment and clothing during clean-up. Avoid the generation of dusts during clean-up. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Shovel, sweep or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Section 7 - Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimise dust generation and accumulation. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Wear appropriate personal protective equipment. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Avoid release to the environment. Do not empty into drains. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities

Keep locked up. Store in tightly closed container. Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

Section 8 - Exposure controls and personal protection

Control parameters

Follow standard monitoring procedures.

Occupational exposure limits

Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A)

Components	Type	Value
Phorate (CAS 298-02-2)	STEL	0.2 mg/m3
	TWA	0.05 mg/m3

Additional components	Type	Value	Form
Crystalline silica (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
Nuisance Dust (CAS SEQ250)	TWA	10 mg/m3	Inhalable dust.

US. ACGIH Threshold Limit Values

Additional components	Type	Value	Form
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

UK. EH40 Workplace Exposure Limits (WELs)

Additional components	Type	Value	Form
Crystalline silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.

Biological limit values

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling Time
Phorate (CAS 298-02-2)	70 %	Acetylcholinesterase	Reduction from individual baseline activity in red blood cells	*

* - For sampling details, please see the source document.

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Phorate (CAS 298-02-2)	70 %	Acetylcholinesterase activity	Reduction from individual baseline activity in red blood cells	*
	60 %	Butyrylcholinesterase activity	Serum or Plasma	*

* - For sampling details, please see the source document.

Exposure guidelines

US ACGIH Threshold Limit Values: Skin designation

Phorate (CAS 298-02-2) — Danger of cutaneous absorption

Control banding

Not available.

Engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection	Wear safety glasses with side shields (or goggles). Chemical goggles are recommended. Refer to the product label for more complete information about variations required that depend on the circumstances.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Long-sleeved shirt and long pants or coveralls, socks and closed toe shoes are required. Use of an impervious apron is recommended. The label should be consulted for more detailed instructions on appropriate PPE.

Individual protection measures, for example personal protective equipment (PPE)

Individual protection measures, such as personal protective equipment (PPE)

Respiratory protection	Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit. The label should be consulted for more specific information with regards to respiratatory protection.
Thermal hazards	Not available.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9 - Physical and chemical properties

Physical state	Solid.
Form	Dry flowable granules.
Colour	Tan/buff coloured, Beige
Odour	Mild mercaptan odour
Odour threshold	Not available.
pH	4 - 7, depending on carrier.
Melting point/freezing point	Not available.
Boiling point and boiling range	38 - 45 °C @ 0.005 mmHg (a.i.)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower explosive limits	
Explosion limit - lower (%)	Not available.
Explosion limit - upper (%)	Not available.
Vapour pressure	6.4 x 10^-4 torr @25 °C (a.i.)
Vapour density	Heavier than air.
Relative density	0.79 - 0.8
Solubility	
Solubility (water)	Neligible (in water)
Solubility (other)	The a.i. is miscible in aromatic and aliphatic hydrocarbons, alcohols, ketones, ethers, esters, chlorinated solvents and vegetable oils.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Particle characteristics	Not available.
Data relevant with regard to physical hazard classes	No relevant additional information available.

Other physical and chemical parameters

Density	0.79 - 0.8 g/ml
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

Section 10 - Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidising agents. Do not mix with other chemicals.
Hazardous decomposition products	No hazardous decomposition products are known.

Section 11 - Toxicological information

Information on possible routes of exposure

Inhalation	Not expected to be inhaled in the granule form. Inhalation of dust can be: Fatal if inhaled.
Skin contact	Toxic in contact with skin.
Eye contact	Causes eye irritation.
Ingestion	Fatal if swallowed.
Early onset symptoms related to exposure	This is a cholinesterase inhibiting organophosphorous pesticide. Acute cholinesterase depression may be evidenced by headache, nausea, vomiting, diarrhea, abdominal cramps, excessive sweating, salivation and tearing, constricted pupils, blurred vision, tightness in chest, weakness, muscle twitching and confusion; in extreme cases, unconsciousness, convulsions, severe respiratory depression and death may occur.
Delayed health effects from exposure	Repeated exposures to small doses of organophosphates may lower the cholinesterase to levels where the above symptoms of acute overexposure are observed.
Acute toxicity	Fatal if swallowed. Toxic in contact with skin. Fatal if inhaled.

Product	**Species**	**Test Results**
Thimet® 100G Systemic Granular Insecticide		
Acute		
Dermal		
LD50	Rabbit	761 mg/kg female
		394 mg/kg male
Inhalation		
Dust		
LC50	Rat	0.06 mg/l, 1 h (male, nose only, a.i. only)
		0.011 mg/l, 1 h (female, nose only, a.i. only)
Oral		
LD50	Rat	35 mg/kg male
		15 mg/kg female

Skin corrosion/irritation	Non irritating to slightly irritating to skin.
Serious eye damage/irritation	Causes eye irritation.
Respiratory or skin sensitisation	
Respiratory sensitisation	Based on available data, the classification criteria are not met.
Skin sensitisation	Not a skin sensitiser.
Germ cell mutagenicity	No evidence of mutagenicity has been observed in animal testing using Phorate.
Carcinogenicity	In long-term studies in rats and mice where Phorate was given by feed, a carcinogenic effect was not observed. Respirable crystalline silica is listed as being carcinogenic by both IARC and NTP. It is present in the product, based on the carrier.

ACGIH Carcinogens

Crystalline silica (CAS 14808-60-7)	A2 Suspected human carcinogen.

Phorate (CAS 298-02-2) A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Crystalline silica (CAS 14808-60-7) 1 Carcinogenic to humans.

Reproductive toxicity No evidence of reproductive toxicity has been observed in animal studies using Phorate.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Due to the presence of respirable crystalline silica in the carrier for this product, there may be damage to the lungs through prolonged or repeated exposure by inhalation. However, because of the acute toxicity of the product through inhalation, it is unlikely damage to the lungs from repeated exposure to the crystalline silica will occur.

Aspiration hazard Not an aspiration hazard.

Chronic effects Repeated exposures to small doses of organophosphates may lower the cholinesterase to levels where the symptoms of acute overexposure are observed.

Other information Symptoms may be delayed.

Section 12 - Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Product		Species	Test Results
Thimet® 100G Systemic Granular Insecticide			
	EC50	Paratanytarsus parhenogenical larvae	0.041 mg/l, 48 hours
	LC50	Mayfly nymphs	0.065 mg/l, 96 hours
Aquatic			
Crustacea	EC50	Daphnia magna	0.031 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)	0.012 mg/l, 96 hours
		Catfish	2.2 mg/l, 96 hours
		Rainbow trout	0.045 mg/l, 96 hours
		Sheepshead minnow	0.0082 mg/l, 96 hours

Persistence and degradability Active Ingredient (a.i.): The aerobic soil metabolism half-life is 3 days.

Bioaccumulative potential No data available for this product.

Mobility in soil Not available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

Section 13 - Disposal considerations

Disposal methods Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Residual waste Dispose of in accordance with all applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal methods/information).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14 - Transport information

ADG

UN number 2783

UN proper shipping name ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC (Phorate)

Transport hazard class(es)

Class 6.1

Subsidiary risk -

Packing group II

Environmental hazards No

Hazchem code 2X

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID

UN number 2783

UN proper shipping name ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC (Phorate)

Transport hazard class(es)

Class	6.1
Subsidiary risk	-
Label(s)	6.1
Packing group	II
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number	2783
UN proper shipping name	Organophosphorus pesticide, solid, toxic (Phorate)
Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Packing group	II
Environmental hazards	No
ERG Code	6L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	2783
UN proper shipping name	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC (Phorate), MARINE POLLUTANT
Transport hazard class(es)	
Class	6.1
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-A
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

ADG

IATA; IMDG; RID

Marine pollutant

General information

The classification of this product is based on the fact that the product as manufactured and transported will not meet dust criteria for inhalation of dusts and therefore the Inhalation LC50 is not applicable.

IMDG Regulated Marine Pollutant.

Section 15 - Regulatory information

Safety, health and environmental regulations

National regulations

This Safety Data Sheet was prepared in accordance with Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals.

Australia Medicines & Poisons Schedule 4

Phorate (CAS 298-02-2)

Australia Medicines & Poisons Schedule 7

Phorate (CAS 298-02-2)

High Volume Industrial Chemicals (HVIC)

Crystalline silica (CAS 14808-60-7)	100000 - 999999 TONNES See the regulation for additional information.

Importation of Ozone Depleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10, as amended)

Not listed.

National Pollutant Inventory (NPI) substance reporting list

Nuisance Dust (CAS SEQ250)	2000 tonnes/yr Threshold Category: 2B 400 tonnes/yr Threshold Category: 2A

Prohibited Carcinogenic Substances

Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)

Not listed.

Restricted Carcinogenic Substances

Not regulated.

Restricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)

Not listed.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Phorate (CAS 298-02-2)	Pesticide

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

Section 16 - Any other relevant information

Issue date	28-August-2019
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Revision information	This document has undergone significant changes and should be reviewed in its entirety.