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## SAFETY DATA SHEET

### Section 1: IDENTIFICATION

<b>Product Name:</b>	<b>ACTARA</b>
<b>Design Code:</b>	A9584E
<b>Recommended Use:</b>	<b>Insecticide</b>
<b>Company Details:</b>	<b>Syngenta Crop Protection Limited</b>
<b>Address:</b>	<b>Tower II, Level 7, 110 Symonds Street Private Bag 92618, Symonds Street AUCKLAND NEW ZEALAND</b>
<b>Telephone number:</b>	<b>(weekdays) 09 306 1500</b>
<b>Emergency Telephone number:</b>	<b>(24 Hours) 0800 734 607</b>
<b>National Poisons &amp; Hazchem Information Centre :</b>	<b>0800 POISON (0800 764 766)</b>

### Section 2: HAZARDS IDENTIFICATION

<b>Hazard classification:</b>	6.1E, 6.4A, 6.9B, 9.1B, 9.3C, 9.4A
<b>Priority Identifier:</b>	WARNING KEEP OUT OF REACH OF CHILDREN
<b>Secondary Identifiers:</b>	6.1E = May be harmful if swallowed. 6.4A = May cause eye irritation. 6.9B = May cause target organ damage from repeated oral exposure at high doses. 9.1B = Toxic to aquatic organisms. 9.3C = Harmful to terrestrial vertebrates. 9.4A = Very toxic to terrestrial invertebrates.

### Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<b>Mixture:</b>		
<b>Chemical Identity of ingredients:</b>		
<b>Ingredient</b>	<b>CAS no.</b>	<b>Content (% w/w)</b>
Thiamethoxam	153719-23-4	25
Diatomaceous earth	61790-53-2	>=1-<5
Lignosulfonic acid, sodium salt	8061-51-6	>=1-<5
Sodium dodecyl sulphate	151-21-3	>=1-<5
other ingredients determined not to be hazardous	-	to 100%

### Section 4: FIRST AID MEASURES

<b>Description of First Aid measures:</b>	
<b>General Advice:</b>	For advice contact the National Poisons Centre on 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth to nose rather than mouth to mouth. Obtain medical attention.
<b>If inhaled:</b>	Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a Doctor or the National Poisons Centre immediately.

<b>In case of skin contact:</b>	Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a doctor. Wash contaminated clothing before re-use.
<b>In case of eye contact:</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses (if present). Immediate medical attention is required.
<b>If swallowed:</b>	If swallowed seek medical advice immediately and show the container or label. DO NOT induce vomiting.
<b>Important symptoms and effects, both acute and delayed:</b>	
<b>Symptoms:</b>	No information available
<b>Indication of any immediate medical attention and special treatment needed:</b>	
<b>Medical advice:</b>	There is no specific antidote available. Treat symptomatically.

## Section 5: FIRE-FIGHTING MEASURES

<b>Extinguishing media:</b>	
<b>Suitable extinguishing media:</b>	Small fires: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Large Fires: Alcohol resistant foam or water spray.
<b>Unsuitable extinguishing media:</b>	Do not use a solid water stream as it may scatter and spread fire.
<b>Special hazards arising from the substance or mixture:</b>	
<b>Specific hazards during fire-fighting:</b>	As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10) Exposure to decomposition products may be a hazard to health.
<b>Advice for firefighters:</b>	
<b>Special protective equipment for firefighters:</b>	Wear full protective clothing and self-contained breathing apparatus.  DO NOT allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to the fire with water spray.

## Section 6: ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures:</b>	
	Refer to protective measures listed in Sections 7 and 8. Avoid dust formation.
<b>Environmental Precautions:</b>	
	Do not flush into surface water or sanitary sewer system.
<b>Methods and material for containment and cleaning up:</b>	
	Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13). Do not create a powder cloud by using a brush or compressed air. Clean contaminated surface thoroughly.  If the product contaminates rivers and lakes or drains inform respective authorities.

**Reference to other sections:** Refer to disposal considerations listed in Section 13.  
Refer to protective measures listed in sections 7 and 8.

## Section 7: HANDLING AND STORAGE

### **Precautions for Safe handling:**

This material is capable of forming flammable dust clouds in air, which if ignited, can spark a dust cloud exposure. Flames, hot surfaces, mechanical sparks and electrostatic discharges can serve as ignition sources for this material. Electrical equipment should be compatible with the flammability characteristics of this material. The flammability characteristics will be made worse if the material contains traces of flammable solvents or is handled in the presence of flammable solvents.

Avoid contact with skin and eyes.

When using do not eat, drink or smoke.

For personal protection see section 8.

### **Conditions for safe storage, including any incompatibilities:**

Keep containers tightly closed in a dry, cool and well-ventilated place.

Keep out of reach of children.

Keep away from food, drink and animal feeding stuffs.

### **Specific end use(s)**

#### **Specific use(s)**

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

## Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

### **Control Parameters**

#### **Occupational Exposure Limits:**

Components	CAS No	Exposure limit	Type of exposure limit	Source
Thiamethoxam	153719-23-4	3 mg/m <sup>3</sup>	8 h TWA	Syngenta
Corn Starch	9005-25-8	10 mg/m <sup>3</sup>	OSH WES	EPA
Diatomaceous earth	61790-53-2	10 mg/m <sup>3</sup>	TWA	WES
Lignosulfonic acid, sodium salt	8061-51-6	10 mg/m <sup>3</sup>	8 h TWA	Supplier

### **Exposure controls**

#### **Engineering measures:**

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

If airborne dust is generated, use local exhaust ventilation controls.

Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.

Where necessary, seek additional occupational hygiene advice.

### **Personal Protective Protection:**

#### **Protective Measures:**

The use of technical measures should always have priority over the use of personal protective equipment.

When selecting personal protective equipment, seek appropriate professional advice.

Personal protective equipment should be certified to appropriate standards.

#### **Eye protection:**

No special protective equipment required.

Follow any specific eye protection policies.

<b>Hand protection:</b>	Chemical resistant gloves are not usually required. Select gloves based on the physical job requirements.
<b>Skin and body protection:</b>	No special protective equipment required. Select skin and body protection based on the physical job requirements.
<b>Respiratory protection:</b>	No personal respiratory protective equipment normally required. A particulate filter respirator may be necessary until effective technical measures are installed.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Information on basic physical and chemical properties:</b>	
<b>Physical state:</b>	Solid
<b>Form:</b>	Granules
<b>Colour:</b>	Beige to brown
<b>Odour:</b>	musty
<b>Odour threshold:</b>	No data available
<b>pH value:</b>	9.4 at 1% w/v
<b>Melting point / freezing point:</b>	No data available
<b>Initial boiling point and boiling range:</b>	No data available
<b>Flash point:</b>	No data available
<b>Flammability:</b>	Not highly flammable
<b>Upper / lower flammability / explosive limits:</b>	No data available
<b>Vapour pressure:</b>	No data available
<b>Vapour Density:</b>	No data available
<b>Relative Density:</b>	No data available
<b>Solubility:</b>	Not soluble in other solvents
<b>Partition co-efficient: n-octanol / water:</b>	No data available
<b>Autoignition temperature</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Kinematic viscosity:</b>	No data available
<b>Explosive properties:</b>	Not explosive
<b>Oxidising properties:</b>	Not oxidising
<b>Minimum ignition temperature:</b>	400°C
<b>Dust explosion class:</b>	Forms flammable dust clouds
<b>Minimum ignition energy:</b>	0.03 – 0.1 J
<b>Bulk density:</b>	0.42 – 0.52 g/cm <sup>3</sup>
<b>Miscibility:</b>	Miscible
<b>Surface tension:</b>	67.2 – 68.6 mN/m at 20°C
<b>Burning number:</b>	2 at 20°C 5 at 100°C

## Section 10: STABILITY AND REACTIVITY

<b>Reactivity:</b>	No information available.
<b>Chemical Stability:</b>	No information available.
<b>Possibility of Hazardous Reactions:</b>	Stable at normal ambient temperature and pressure. Hazardous polymerisation does not occur. At elevated temperatures it will undergo rapid, gas evolving thermal decomposition.
<b>Conditions to Avoid</b>	No information available.
<b>Incompatible Materials:</b>	No information available.

**Hazardous Decomposition Products:**

Combustion or thermal decomposition will evolve toxic and irritant vapours.

**Section 11: TOXICOLOGICAL INFORMATION**

**HSNO Classifications:**

- 6.1E = May be harmful if swallowed.  
6.4A = May cause eye irritation  
6.9B = May cause target organ damage from repeated oral exposure at high doses.

**Acute toxicity (similar composition)**

Swallowed:	LD <sub>50</sub> >5000 mg/kg (rat, male and female)
Dermal absorption:	LD <sub>50</sub> >5000 mg/kg (rat, male and female)
Inhaled:	LC <sub>50</sub> (4 h) >5290 mg/m <sup>3</sup> (rat)
Aspiration hazard:	<b>Not classified</b>
Respiratory irritation:	<b>Not classified</b>
Skin corrosion / irritation:	<b>Non-Irritating</b> (rabbit)
Eye damage / irritation:	<b>IRRITANT</b> (rabbit) (HSNO Classification)
Respiratory or Skin Sensitisation:	<b>Not a sensitiser</b> (skin - guinea pig)

**Chronic / Long Term Effects (active ingredient)**

Germ cell mutagenicity:	Animal testing did not show any mutagenic effects.
Carcinogenicity:	Liver tumours noted in mice that are not relevant to humans.
Reproductive toxicity:	Did not show reproductive toxicity effects in animal experiments.
Specific Organ toxicity:	<i>Single exposure:</i> No information <i>Repeated exposure:</i> Did not show neurotoxicity in animal experiments. The substance or mixture is classified as specific target organ toxicant, repeated exposure, Class 6.9B.
Narcotic Effects:	Not classified

**Section 12: ECOLOGICAL INFORMATION**

**HSNO Classifications:**

- 9.1B = Toxic to aquatic organisms.  
9.3C = Harmful to terrestrial vertebrates.  
9.4A = Very toxic to terrestrial invertebrates.

**Ecotoxicity Effects – Aquatic (similar product)**

<b>Acute toxicity to fish:</b>	LC <sub>50</sub> (96 h) = >100 mg/L ( <i>Onchorhynchus mykiss</i> [rainbow trout])
<b>Toxicity to daphnia and other aquatic invertebrates:</b>	EC <sub>50</sub> (48h) = >100 mg/L ( <i>Daphnia magna</i> Straus (water flea)) EC <sub>50</sub> (48h) = 0.154 mg/L ( <i>Chironomus riparius</i> (midge))
<b>Toxicity to algae:</b>	EC <sub>50</sub> (72 h) = >100 mg/L ( <i>Pseudokirchneriella subcapitata</i> [green algae])

**Ecotoxicity Effects – Terrestrial (active ingredient unless otherwise specified)**

<b>Toxicity to Birds:</b>	LD <sub>50</sub> = 576 mg/kg (mallard duck) (active ingredient) LD <sub>50</sub> = 1552 mg/kg (bobwhite quail) (active ingredient)
<b>Toxicity to soil dwelling organisms:</b>	LC <sub>50</sub> (14 days) = >1000 mg/kg ( <i>Eisenia foetida</i> [earthworms]) (product)
<b>Toxicity to Bees:</b>	LD <sub>50</sub> = 0.024 µg/bee (contact) (active ingredient) LD <sub>50</sub> (72h) = 0.08 µg/bumble bee (oral) (similar product) LD <sub>50</sub> (72h) = 0.44 µg/bumble bee (contact) (similar product)

**Persistence and degradability:**

<b>Biodegradability:</b>	Not readily biodegradable
<b>Stability in water:</b>	Degradation half-life: 11 d Not persistent in water.

**Bioaccumulative potential: (active ingredient)**

<b>Bioaccumulation:</b>	The substance has low potential for bioaccumulation.
<b>Mobility in soil:</b>	The substance has medium mobility in soil.
<b>Stability in soil:</b>	Degradation half-life: 51 d Percent Dissipation: 50% Not persistent in soil.

**Other adverse effects:**

<b>Results of PBT and vPvB assessment (product):</b>	This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).
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### Section 13: DISPOSAL CONSIDERATIONS

<b>Product Disposal:</b>	DO NOT contaminate ponds, waterways or ditches with chemical or used containers. DO NOT dispose of waste into sewer. Dispose of this product only by using according to the label. Otherwise, dispose of waste at an approved landfill or other approved facility that will ensure the substance does not exceed the tolerable exposure limit (TEL) or environmental exposure limit (EEL), where relevant, or will treat the substance so that it is rendered no longer hazardous.
<b>Container Disposal:</b>	Ensure the container is empty. Triple rinse empty container and add rinsate to the spray tank. Recycle empty container through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.

### Section 14: TRANSPORT INFORMATION

<b>Rail / Road (NZS 5433)</b>	UN-No:	3077
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiamethoxam)
<b>Sea (IMDG-Code)</b>	UN-No:	3077
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiamethoxam)
	EmS Code:	F-A, S-F
	MARINE POLLUTANT:	Yes
<b>Air (ICAO/IATA)</b>	UN-No:	3077
	Class:	9
	Packing Group:	III
	Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (thiamethoxam)
	Packing instruction:	Y956 (cargo and passenger aircraft)

## Section 15: REGULATORY INFORMATION

<b>HSNO Approval Number:</b>	HSR000099
<b>Tolerable Exposure Limit or Environmental Exposure Limit:</b>	EEL <sub>FRESHWATER</sub> = 0.00035 mg/L (0.35µg/L) EEL <sub>MARINE</sub> = 0.069 mg/L (69µg/L)
<b>Required Regulatory Controls:</b>	
<b>Certified handler:</b>	No
<b>Tracking:</b>	No
<b>Record Keeping:</b>	Yes – 9.4A substances
<b>ACVM Registration:</b>	P 7131
<b>ACVM Controls:</b>	See <a href="http://www.foodsafety.govt.nz/industry/acvm">www.foodsafety.govt.nz/industry/acvm</a> for registration conditions.
<b>International Agreements related to the substance (eg, Montreal Protocol, Stockholm Convention or Rotterdam Convention):</b>	

## Section 16: OTHER INFORMATION

<b>Date of SDS Preparation / Review:</b>	6 March 2018
<b>Version number of SDS:</b>	5
<b>Key / Legend to abbreviations and acronyms used:</b>	
<p>AICS - Australian Inventory of Chemical Substances;  ANTT - National Agency for Transport by Land of Brazil;  ASTM - American Society for the Testing of Materials;  bw - Body weight;  CMR - Carcinogen, Mutagen or Reproductive Toxicant;  CPR - Controlled Products Regulations;  DIN - Standard of the German Institute for Standardisation;  DSL - Domestic Substances List (Canada);  ECx - Concentration associated with x% response;  ELx - Loading rate associated with x% response;  EmS - Emergency Schedule;  ENCS - Existing and New Chemical Substances (Japan);  ErCx - Concentration associated with x% growth rate response;  ERG - Emergency Response Guide;  GHS - Globally Harmonized System;  GLP - Good Laboratory Practice;  IARC - International Agency for Research on Cancer;  IATA - International Air Transport Association;  IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;  IC50 - Half maximal inhibitory concentration;  ICAO - International Civil Aviation Organization;  IECSC - Inventory of Existing Chemical Substances in China;  IMDG - International Maritime Dangerous Goods;  IMO - International Maritime Organization;  ISHL - Industrial Safety and Health Law (Japan);  ISO - International Organisation for Standardization;  KECI - Korea Existing Chemicals Inventory;  LC50 - Lethal Concentration to 50 % of a test population;  LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose);</p>	<p>MARPOL - International Convention for the Prevention of Pollution from Ships;  n.o.s. - Not Otherwise Specified;  Nch - Chilean Norm;  NO(A)EC - No Observed (Adverse) Effect Concentration;  NO(A)EL - No Observed (Adverse) Effect Level;  NOELR - No Observable Effect Loading Rate;  NOM - Official Mexican Norm;  NTP - National Toxicology Program;  NZIoC - New Zealand Inventory of Chemicals;  OECD - Organization for Economic Co-operation and Development;  OPPTS - Office of Chemical Safety and Pollution Prevention;  PBT - Persistent, Bioaccumulative and Toxic substance;  PICCS - Philippines Inventory of Chemicals and Chemical Substances;  (Q)SAR - (Quantitative) Structure Activity Relationship;  REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals;  SADT - Self-Accelerating Decomposition Temperature;  SDS - Safety Data Sheet;  TCSI - Taiwan Chemical Substance Inventory;  TDG - Transportation of Dangerous Goods;  TSCA - Toxic Substances Control Act (United States);  UN - United Nations;  UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods;  vPvB - Very Persistent and Very Bioaccumulative;  WHMIS - Workplace Hazardous Materials Information System</p>
<p>The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the test.</p>	
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