

**Product name: Versatill™ PowerFlo™ Herbicide****Issue Date: 31.10.2019**

Dow AgroSciences\* (NZ) Ltd encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product name:** Versatill™ PowerFlo™ Herbicide**Identified uses:** End use herbicide product**COMPANY IDENTIFICATION**

DOW AGROSCIENCES\* (NZ) LIMITED

89 PARITUTU ROAD

4342 NEW PLYMOUTH

NEW ZEALAND

**Customer Information Number:**

0800-803-939

[NZCustomerservice@corteva.com](mailto:NZCustomerservice@corteva.com)**EMERGENCY TELEPHONE NUMBER****24-Hour Emergency Contact:** +64 6 751 2407**Local Emergency Contact:** 0800 844 455**For medical advice, contact the New Zealand Poisons Information Centre:**

0800 POISON (0800 764 766)

**Transport Emergency Only Dial:** 111

This SDS may not provide exhaustive guidance for all the HSNO controls assigned to this substance. The NZ EPA website [www.epa.govt.nz](http://www.epa.govt.nz) should be consulted for a full list of triggered controls and cited regulations

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## 2. HAZARDS IDENTIFICATION

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**Hazard classification**

NEW ZEALAND HAZARDOUS SUBSTANCES CLASSIFICATION: Classified as hazardous according to criteria in the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001. Refer to section 15 for HSNO Approval number.

**HSNO classifications: 9.1C, 9.2A, 9.3C**Signal word: **WARNING!****Hazard statements**

Harmful to aquatic life with long lasting effects.

Very toxic to the soil environment.

Harmful to terrestrial vertebrates.

**Prevention**

Avoid unintentional release to the environment.

**Response**

Collect spillage.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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Component	CASRN	Concentration
Clopyralid dimethylammonium salt	1096483-37-2	60.2 %
Balance	Not available	39.8 %

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**4. FIRST AID MEASURES**

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**Consult the National Poisons Information Centre (0800 POISON (0800 764 766)) or a doctor in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur seek medical attention immediately.**

**Description of first aid measures**

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

**Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**Eye contact:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.

**Ingestion:** No emergency medical treatment necessary. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

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## 5. FIREFIGHTING MEASURES

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**Hazchem code:** 2X

**Suitable extinguishing media:** To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Unsuitable extinguishing media:** No data available

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8: Exposure Controls and Personal Protection.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12: Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Corteva Agriscience for clean-up assistance. See Section 13: Disposal Considerations, for additional information.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Keep out of reach of children. Avoid contact with eyes, on skin, on clothing. Do not swallow. Avoid breathing vapour or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

**This substance is subject to a requirement for an emergency management plan, secondary containment and signage, whenever it is held in quantities of 100 L or more, either alone or in aggregate with other hazardous substances. See Hazardous Substances Emergency Management and Identification Regulations.**

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Control parameters:** Exposure limits are listed below, if they exist:

Exposure limits have not been established for those substances listed in the composition, if any have been disclosed.

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields).

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under standard AS/NZS 2161.10: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to AS/NZS 2161.10) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Wear clean, body-covering clothing.

**Respiratory protection** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most

conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

**Other Information:** Selection and use of personal protective equipment should be in accordance with the recommendations in one or more of the relevant Australian/New Zealand Standards, including:

AS/NZS 1336: Eye and Face protection - Guidelines.

AS/NZS 1337: Personal eye protection - Eye and face protectors for occupational applications.

AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment.

AS/NZS 2161: Occupational protective gloves.

AS/NZS 2210: Occupational protective footwear.

AS/NZS 4501: Occupational protective clothing.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Appearance - Physical state</b>	Liquid
<b>- Colour</b>	Blue.
<b>Odour</b>	Characteristic
<b>Odour Threshold</b>	No test data available
<b>pH</b>	3.7 1% <i>pH Electrode</i> (1% aqueous suspension)
<b>Melting point/range</b>	Not applicable to liquids
<b>Freezing point</b>	No test data available
<b>Boiling point (760 mmHg)</b>	100 – 105 <sup>o</sup> c
<b>Flash point – closed cup</b>	> 100 °C <i>Pensky-Martens Closed Cup ASTM D 93</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	No data available
<b>Lower explosion limit</b>	Not test data available
<b>Upper explosion limit</b>	Not test data available
<b>Vapour Pressure</b>	1.2 x 10 <sup>-5</sup> mmHg @ 25°C (clopyralid acid)
<b>Relative Vapour Density (air = 1)</b>	No test data available
<b>Relative Density (water = 1)</b>	1.229 at 20°C / 4°C <i>Digital Density Meter (Oscillating Coil)</i>
<b>Water solubility</b>	Soluble
<b>Partition coefficient: n-octanol/water</b>	No data available
<b>Auto-ignition temperature</b>	No test data available
<b>Decomposition temperature</b>	No data available
<b>Dynamic Viscosity</b>	13.4 mPa.s at 20 °C; 6.7 mPa.s at 40 °C
<b>Kinematic Viscosity</b>	No data available
<b>Explosive properties</b>	No data available
<b>Oxidizing properties</b>	No significant increase (> 5°C) in temperature
<b>Molecular weight</b>	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** No dangerous reaction known under conditions of normal use.

**Chemical stability:** Thermally stable at recommended temperatures and pressures.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Some components of this product can decompose at elevated temperatures.

**Incompatible materials:** Avoid contact with: Strong acids. Strong oxidizers.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Nitrogen oxides.

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## 11. TOXICOLOGICAL INFORMATION

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### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.  
As product: LD50, Rat, female > 5,000 mg/kg.

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.  
As product: LD50, Rat, male and female > 5,000 mg/kg. *OECD Test Guideline 402.*

#### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not observed.  
As product: LC50 Rat, male and female, 4 Hour, dust/mist > 5.12 mg/l. No deaths occurred at this concentration.

### Skin corrosion/irritation

Brief contact is essentially non-irritating to skin.

### Serious eye damage/eye irritation

May cause slight temporary eye irritation. Corneal injury is unlikely.

### Sensitization

For skin sensitization: Did not demonstrate the potential for contact allergy in mice.  
For respiratory sensitization: No relevant data found.

### Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### Specific Target Organ Systemic Toxicity (Repeated Exposure)

For similar active ingredient(s): Clopyralid. Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

**Carcinogenicity**

For similar active ingredient(s): Clopyralid. Did not cause cancer in laboratory animals.

**Teratogenicity**

For similar active ingredient(s): Clopyralid caused birth defects in test animals, but only at greatly exaggerated doses that were severely toxic to the mothers. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure.

**Reproductive toxicity**

For similar active ingredient(s). Clopyralid. In animal studies, did not interfere with reproduction.

**Mutagenicity**

For similar active ingredient(s): Clopyralid. In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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**12. ECOLOGICAL INFORMATION**

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**Ecotoxicity****Clopyralid-dimethylammonium salt****Acute toxicity to fish**

For similar material(s): Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).

For similar material(s): LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour > 99.9 mg/l

For similar material(s): LC50, *Lepomis macrochirus* (Bluegill sunfish), 96 Hour > 102 mg/l

**Acute toxicity to aquatic invertebrates**

For similar material(s): Material is practically non-toxic to aquatic invertebrates on an acute basis (LC50/EC50 > 100 mg/L).

EC50, *Daphnia magna* (Water flea), static test, 48 Hour > 99 mg/l

**Acute toxicity to algae/aquatic plants**

For similar material(s): Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

For similar material(s): ErC50, *Pseudokirchneriella subcapitata* (green algae), 96 Hour, Growth rate inhibition, 33.1 mg/l

For similar material(s): ErC50, *Myriophyllum spicatum*, 14 d > 3 mg/l

For similar material(s): NOEC, *Myriophyllum spicatum*, 14 d, 0.0089 mg/l

**Toxicity to birds**

For similar material(s): Material is slightly toxic to birds on an acute basis (LD50 is 1,465 mg/kg).

For similar material(s): Material is practically non-toxic to birds on a dietary basis (LC50 is > 5,000 mg/kg).

**Balance****Acute toxicity to fish**

No relevant data found.

**Persistence and degradability**

**Clopyralid-dimethylammonium salt**

**Biodegradability:** For similar active ingredient(s). Clopyralid. Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Clopyralid-dimethylammonium salt**

**Bioaccumulation:** For similar active ingredient(s). Clopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in Soil**

**Clopyralid-dimethylammonium salt**

For similar active ingredient(s). Clopyralid. Potential for mobility in soil is very high (Koc between 0 and 50).

**Balance**

No relevant data found.

**Results of PBT and vPvB assessment**

**Clopyralid-dimethylammonium salt**

This substance is not considered to be persistent, bioaccumulating and toxic (PBT) or very persistent and very bioaccumulating (vPvB).

**Balance**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

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## **13. DISPOSAL CONSIDERATIONS**

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**Disposal methods:** If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

Waste handling, treatment and disposal practices must be in compliance with the New Zealand Hazardous Substances (Disposal) Regulations 2001. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Regulations concerning waste management may vary in different locations.

This product when disposed of in its unused and uncontaminated state should be treated as a hazardous waste.



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## 14. TRANSPORT INFORMATION

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**PUBLIC PASSENGER VEHICLE TRANSPORT:** To be transported **ONLY** in the sealed original container.

**Maximum volume permitted to be transported in a passenger service vehicle: 1L**

**Classification for ROAD and Rail transport:**

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

Not regulated for transport

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the  
IBC or IGC Code**

Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport

**Hazchem code:** 2X

### **Matters needing attention for transportation**

Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code and IATA special provision A197. If the product meets these special provisions, it may be shipped in New Zealand as a non-dangerous goods under provisions in NZS 5433 code which accepts IMDG and IATA classification.

This information is not intended to convey all specific regulatory or operational requirements/ information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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**ACVMG APPROVAL NUMBER:** P8801

**HSNO Approval Code:** HSR100844

**ADVICE TO PRODUCT USERS REGARDING HSNO CONTROLS:** Users of this product should make reference to the New Zealand Hazardous Substances and New Organisms Act and Regulations for relevant risk management controls. Additional local requirements may be applicable in accordance with planning controls under the Resource Management Act. Refer to Environment Protection Authority publication; User Guide to the HSNO Controls Regulations. <http://www.epa.govt.nz>

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## 16. OTHER INFORMATION

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### Revision

Identification Number: 101191388/ A157 / Issue Date: 31.10.2019 / Version: Replaces 21.09.2017

DAS code: GF-2551

Sections amended: 1, 2, 6, 14, 16

### Full text of other abbreviations

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); 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

DOW AGROSCIENCES\* (NZ) LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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