



# SAFETY DATA SHEET

## DOW AGROSCIENCES (NZ) LIMITED

**Product name: Maestro Herbicide**

**Issue Date: 09.05.2016**

DOW AGROSCIENCES (NZ) LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name:** Maestro™ Herbicide  
**Identified uses:** Herbicide

#### COMPANY IDENTIFICATION

DOW AGROSCIENCES (NZ) LIMITED  
89 PARITUTU ROAD  
4342 NEW PLYMOUTH  
NEW ZEALAND

**Customer Information Number:** 0800-803-939  
[fnpcust@dow.com](mailto:fnpcust@dow.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.

### 2. HAZARDS IDENTIFICATION

#### 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 Hazard classification: 6.1D, 6.9A, 8.3A, 9.1A, 9.2A, 9.3B**

#### Hazards:

H302: Harmful if swallowed  
H372: Causes damage to organs (blood, bone marrow, kidney, liver, testes) through prolonged or repeated exposure.  
H318: Causes serious eye damage  
H400: Toxic to aquatic life  
H421: Very toxic to the soil environment  
H432: Toxic to terrestrial vertebrates

**Prevention:**

Keep out of reach of children.  
Read label before use  
Do not breathe vapour/spray  
Do not eat, drink or smoke when using this product  
Wear protective gloves and clothing, eye and face protection  
Wash face and hands thoroughly after handling

**Response:**

If medical advice is needed, have product container or label at hand  
Immediately call a POISON CENTRE or doctor/physician if you feel unwell.  
IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell  
Rinse mouth  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.  
Collect spillage.

**Storage:**

Store locked up.

**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
Salts and esters of MCPA	2039-46-5	90 - 95 %
Balance	Not available	< 10 %

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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. Wash clothing before re-use. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

**Eye contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** Immediately call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not 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:** May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. Swallowing may result in burns/ulceration of mouth, stomach and lower GI tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal / esophageal control if lavage is done. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. 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. Repeated excessive exposure may aggravate pre-existing lung disease.

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## **5. FIREFIGHTING MEASURES**

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**Hazchem Code:** 2X.

**Suitable extinguishing media:** Water fog or fine spray, foam, carbon dioxide or dry chemical.

**Unsuitable extinguishing media:** No data available.

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

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Do not use direct water stream. May spread fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of re-ignition has passed. Burning liquids may be extinguished by dilution with water. This material does not burn. Fight fire for other material that is burning. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. 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:** Evacuate area. Refer to section 7: Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Keep up-wind of spill. Ventilate area of leak or spill. 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. Spills or discharge to natural waterways is likely to kill aquatic organisms.

**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 Dow AgroSciences 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. Do not get in eyes. Avoid contact with skin, and clothing. Avoid breathing vapour or mist. Do not swallow. 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.**

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
MCPA	Dow Industrial Hygiene Guide	TWA	5 mg/m <sup>3</sup>

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, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use chemical goggles.

#### Skin protection

**Hand protection:** 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 6 or higher (breakthrough time greater than 480 minutes according to AS/NZS 2161.10) is recommended. When only brief contact is expected, 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:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**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. In misty atmospheres, use an approved particulate 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</b>	
Physical state	Liquid.
Color	Yellow to brown
Odor	Mild
Odor Threshold	No data available
pH	7.5 – 9.5 <i>Vendor</i>
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point – closed cup	> 200 <sup>0</sup> c
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor Pressure	Not determined for product. MCPA = 0.2 mPa at 20 <sup>0</sup> c
Relative Vapor Density (air = 1)	1.170 <i>Vendor</i>
Relative Density (water = 1)	No data available
Water solubility	294 g/L <i>Vendor</i>
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	90 CPS at 21 <sup>0</sup> c
Explosive properties	No data available
Oxidizing properties	No data available
Liquid density	1.185 g/cm <sup>3</sup> <i>Estimated</i>
Molecular weight	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 typical use temperatures.

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

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

**Incompatible materials:** Avoid contact with: Strong acids. Strong bases. 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: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Nitrogen oxides. Toxic gases are released during decomposition.

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## **11. TOXICOLOGICAL INFORMATION**

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### **Acute toxicity**

#### **Acute oral toxicity**

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Single dose oral LD50 has not been determined.

For similar active ingredient(s): MCPA. LD50, Rat, 700 - 1,160 mg/kg

#### **Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

The dermal LD50 has not been determined.

For similar active ingredient(s): MCPA. LD50, Rat > 4,000 mg/kg

#### **Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to mist. Mist may cause irritation of upper respiratory tract (nose and throat) and lungs.

For the active ingredient: LC50, Rat, male and female, 4 Hour, dust/mist > 4.72 mg/l. Maximum attainable concentration.

### **Skin corrosion/irritation**

Brief contact may cause skin irritation with local redness.

Prolonged and/or repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage.

Aqueous solutions may cause more severe effects including burns.

### **Serious eye damage/eye irritation**

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

### **Sensitization**

For the active ingredient(s): Did not cause allergic skin reactions when tested in guinea pigs.

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). MCPA. In animals, effects have been reported on the following organs: Blood. Bone marrow. Kidney. Liver. Testes.

**Carcinogenicity**

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

**Teratogenicity**

For similar active ingredient(s). MCPA. Has caused birth defects in laboratory animals only at doses toxic to the mother. Has been toxic to the foetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**

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

**Mutagenicity**

For the active ingredient(s): In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were inconclusive

**Aspiration Hazard**

Based on available information, aspiration hazard could not be determined.

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**12. ECOLOGICAL INFORMATION**

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**Ecotoxicity****salts and esters of MCPA****Acute toxicity to fish**

For similar active ingredient(s): Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

As product: LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, 89 - 180 mg/l  
LC50, *Lepomis macrochirus* (Bluegill sunfish), static test, 96 Hour, 10 - 306 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, *Crassostrea virginica* (eastern oyster), static test, 48 Hour, 25.7 mg/l  
LC50, *Penaeus duorarum* (pink shrimp), static test, 96 Hour, 301 mg/l

**Acute toxicity to algae/aquatic plants**

For similar material(s): IC50, *Lemna gibba*, 14 d, 0.152 mg/l

**Toxicity to Above Ground Organisms**

Material is moderately toxic to birds on an acute basis (LD50 between 51 and 500 mg/kg).  
oral LD50, *Colinus virginianus* (Bobwhite quail), 14 d, 478 mg/kg

Material is practically non-toxic to birds on a dietary basis (LC50 > 5,000 ppm).  
dietary LC50, *Anas platyrhynchos* (Mallard duck), 5 d > 5,620 mg/kg diet.  
dietary LC50, *Colinus virginianus* (Bobwhite quail), 8 d > 5,620 mg/kg diet.

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

No relevant data found.

**Persistence and degradability****salts and esters of MCPA**

**Biodegradability:** For similar active ingredient(s). Biodegradation under aerobic laboratory conditions is below detectable limits (BOD20 or BOD28/ThOD < 2.5%). Biodegradation rate may increase in soil and/or water with acclimation.



**Stability in Water:** Hydrolysis, half-life, 30.0 Hour

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential salts and esters of MCPA**

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

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in Soil salts and esters of MCPA**

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

**Balance**

No relevant data found.

**Results of PBT and vPvB assessment salts and esters of MCPA**

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: Not permitted****Classification for ROAD and Rail transport:**

<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(MCPA)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III
<b>Environmental hazards</b>	MCPA

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

<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(MCPA)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	MCPA
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

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

<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(MCPA)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III

**Hazchem Code: 2X**

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. 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.

Compliance with the above land, rail, marine and air requirements is deemed to comply with the applicable requirements of the Hazardous substances Identification and Emergency Management Regulations.
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## 15. REGULATORY INFORMATION

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ACVMG APPROVAL NUMBER: P007316

HSNO Approval Code: HSR000381

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: 101190494 / A157 / Issue Date: 09.05.2016 / Version: Replaces 13.07.2011  
DAS Code: GF-1644

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)SDS's, we are not and cannot be responsible for (M)SDS's 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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