

# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

**Product name:** VISTA™ XRT Herbicide

**Issue Date:** 05/15/2015

**Print Date:** 05/21/2015

DOW AGROSCIENCES LLC 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.

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### 1. IDENTIFICATION

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**Product name:** VISTA™ XRT Herbicide

**Recommended use of the chemical and restrictions on use**

**Identified uses:** End use herbicide product

**COMPANY IDENTIFICATION**

DOW AGROSCIENCES LLC  
9330 ZIONSVILLE RD  
INDIANAPOLIS IN 46268-1053  
UNITED STATES

**Customer Information Number:**

800-992-5994  
[info@dow.com](mailto:info@dow.com)

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 800-992-5994

**Local Emergency Contact:** 352-323-3500

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### 2. HAZARDS IDENTIFICATION

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**Hazard classification**

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Eye irritation - Category 2A

Skin sensitisation - Category 1

Reproductive toxicity - Category 1B

**Label elements**

**Hazard pictograms**



Signal word: **DANGER!**

**Hazards**

May cause an allergic skin reaction.  
Causes serious eye irritation.  
May damage fertility or the unborn child.

**Precautionary statements****Prevention**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**

IF ON SKIN: Wash with plenty of soap and water.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF exposed or concerned: Get medical advice/ attention.  
If skin irritation or rash occurs: Get medical advice/ attention.  
If eye irritation persists: Get medical advice/ attention.  
Wash contaminated clothing before reuse.

**Storage**

Store locked up.

**Disposal**

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

**Other hazards**

no data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Fluroxypyr 1-methylheptyl ester	81406-37-3	45.52%
Solvent naphtha (petroleum), heavy aromatic	64742-94-5	>= 0.7 - <= 2.6 %
N-Methyl-2-pyrrolidone	872-50-4	0.1%
Balance	Not available	>= 51.8 - <= 53.7 %

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## 4. FIRST AID MEASURES

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### 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. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be available in work area.

**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. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** No emergency medical treatment necessary.

**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. Skin contact may aggravate preexisting dermatitis.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

### 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 fluoride. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. 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:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. 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 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 swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. 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.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Fluroxypyr 1-methylheptyl ester	Dow IHG	TWA	10 mg/m <sup>3</sup>
N-Methyl-2-pyrrolidone	US WEEL	TWA	10 ppm
	US WEEL	TWA	Absorbed via skin

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 chemical goggles.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. 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. 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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical state	Liquid.
Color	Yellow

Odor	Spicy
Odor Threshold	No test data available
pH	4.58 1% ASTM E70
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup > 100 °C (> 212 °F) ASTM D3278
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.05
Water solubility	emulsifiable
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	358 °C (676 °F) EC Method A15
Decomposition temperature	No test data available
Dynamic Viscosity	28.2 mPa.s at 40 °C (104 °F) OECD 114
Kinematic Viscosity	No test data available
Explosive properties	No EEC A14
Oxidizing properties	no data available
Liquid Density	1.05 g/cm <sup>3</sup> at 20 °C (68 °F) OECD 109
Molecular weight	No test data available
Surface tension	32 mN/m at 25 °C (77 °F) EC Method A5

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:** Unstable at elevated 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:** None known.

**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. Hydrogen fluoride. Nitrogen oxides. Toxic gases are released during decomposition.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### 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 No deaths occurred at this concentration.

#### 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 No deaths occurred at this concentration.

#### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.50 mg/l

### Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

May cause drying and flaking of the skin.

Prolonged contact is essentially nonirritating to skin.

### Serious eye damage/eye irritation

May cause moderate eye irritation.

May cause slight corneal injury.

### Sensitization

As product:

Has demonstrated 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 the active ingredient(s):

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

For the major component(s):

For similar material(s):

In animals, effects have been reported on the following organs:

Kidney.

For the minor component(s):

In animals, effects have been reported on the following organs:

Lung.

Gastrointestinal tract.

Thyroid.

Urinary tract.

Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

#### **Carcinogenicity**

For similar active ingredient(s). Fluroxypyr-meptyl. Did not cause cancer in laboratory animals.

#### **Teratogenicity**

For the active ingredient(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. For the minor component(s): N-methyl pyrrolidone has caused toxic effects to the fetus in laboratory animals at high dose levels with either mild or undetectable maternal toxicity.

#### **Reproductive toxicity**

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

#### **Mutagenicity**

As product: 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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*Ecotoxicological information appears in this section when such data is available.*

#### **Toxicity**

##### **Acute toxicity to fish**

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).

LC50, *Oncorhynchus mykiss* (rainbow trout), flow-through test, 96 Hour, 14.3 mg/l, OECD Test Guideline 203

##### **Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 20 mg/l, OECD Test Guideline 202

##### **Acute toxicity to algae/aquatic plants**

ErC50, *Pseudokirchneriella subcapitata* (green algae), static test, 72 Hour, Growth rate inhibition, 9.6 mg/l, OECD Test Guideline 201

ErC50, *Myriophyllum spicatum*, static test, 14 d, Cell yield inhibition, 0.178 mg/l, OECD Test Guideline 201



**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, *Colinus virginianus* (Bobwhite quail), > 2,250 mg/kg

**Toxicity to soil-dwelling organisms**

LC50, *Eisenia fetida* (earthworms), 14 d, survival, > 1,000 mg/kg

**Persistence and degradability****Fluroxypyr 1-methylheptyl ester**

**Biodegradability:** Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

**Biodegradation:** 32 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301D or Equivalent

**Theoretical Oxygen Demand:** 2.2 mg/mg

**Stability in Water (1/2-life)**

, half-life, 454 d

**Solvent naphtha (petroleum), heavy aromatic**

**Biodegradability:** For similar material(s): Biodegradation may occur under aerobic conditions (in the presence of oxygen). Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**N-Methyl-2-pyrrolidone**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

**Biodegradation:** 91 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand:** 2.58 mg/mg

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitizer:** OH radicals

**Atmospheric half-life:** 0.486 d

**Method:** Estimated.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential****Fluroxypyr 1-methylheptyl ester**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** 5.04 Measured  
**Bioconcentration factor (BCF):** 26 Oncorhynchus mykiss (rainbow trout) Measured

**Solvent naphtha (petroleum), heavy aromatic**

**Bioaccumulation:** For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

**N-Methyl-2-pyrrolidone**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).  
**Partition coefficient: n-octanol/water(log Pow):** -0.38 Measured

**Balance**

**Bioaccumulation:** No relevant data found.

**Mobility in soil**

**Fluroxypyr 1-methylheptyl ester**

Expected to be relatively immobile in soil (Koc > 5000).  
**Partition coefficient(Koc):** 6200 - 43000

**Solvent naphtha (petroleum), heavy aromatic**

No data available.

**N-Methyl-2-pyrrolidone**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.  
Potential for mobility in soil is very high (Koc between 0 and 50).  
**Partition coefficient(Koc):** 21 Estimated.

**Balance**

No relevant data found.

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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.

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## 14. TRANSPORT INFORMATION

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**DOT**

Not regulated for transport

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

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Fluroxypyr)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Fluroxypyr
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):**

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Fluroxypyr)
UN number	UN 3082
Class	9
Packing group	III

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.

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## 15. REGULATORY INFORMATION

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**OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Acute Health Hazard  
Chronic Health Hazard

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

**Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Components	CASRN
Solvent naphtha (petroleum), heavy aromatic	64742-94-5

**Pennsylvania (Worker and Community Right-To-KnowAct): Pennsylvania Special Hazardous Substances List:**

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 62719-586

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**WARNING**

Causes substantial but temporary eye injury  
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

**16. OTHER INFORMATION****Hazard Rating System****NFPA**

	Health	Fire	Reactivity
	1	1	1

**Revision**

Identification Number: 101188173 / A211 / Issue Date: 05/15/2015 / Version: 4.0

DAS Code: GF-1784

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

Absorbed via skin	Absorbed via skin
Dow IHG	Dow Industrial Hygiene Guideline
TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LLC 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.