SAFETY DATA SHEET
CORTEVA AGRISCIENCE LLC

Product name: DIMENSION™ 2EW Herbicide

Issue Date: 08/16/2021
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CORTEVA AGRISCIENCE LLC encourages you and expects you to read and understand the entire 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.

1. IDENTIFICATION

Product name: DIMENSION™ 2EW Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
CORTEVA AGRISCIENCE LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN, 46268-1053
UNITED STATES

Customer Information Number : 800-992-5994
E-mail address : customerinformation@corteva.com

EMERGENCY TELEPHONE
24-Hour Emergency Contact : 800-992-5994
Local Emergency Contact : 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Flammable liquids - Category 4
Skin irritation - Category 2
Skin sensitization - Sub-category 1B

Label elements
Hazard pictograms

Signal Word: **WARNING!**

Hazards
Combustible liquid.
Causes skin irritation.
May cause an allergic skin reaction.

Precautionary statements

Prevention
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
Wash skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.

Response
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage
Store in a well-ventilated place. Keep cool.

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

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Concentration
Dithiopyr	97886-45-8	24.0%
Cyclohexanone	108-94-1	13.0%
Balance	Not available	63.0%

4. FIRST AID MEASURES

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.

5. FIRE-FIGHTING MEASURES

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: Sulfur oxides. Nitrogen oxides. Hydrogen fluoride. 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. When product is stored in closed containers, a flammable atmosphere can develop.

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.

6. ACCIDENTAL RELEASE MEASURES

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. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. 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 the company for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep away from heat, sparks and flame. Keep out of reach of children. Do not swallow. Avoid breathing vapor or mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. 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
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Dithiopyr	Dow IHG	TWA	0.25 mg/m3

Cyclohexanone	ACGIH	TWA		20 ppm
	ACGIH	STEL		50 ppm
	OSHA Z-1	TWA	200 mg/m3	50 ppm
	ACGIH	TWA		SKIN
	ACGIH	STEL		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.

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Cyclohexanone	108-94-1	1,2-Cyclohexanediol	Urine	End of shift at end of workweek	80 mg/l	ACGIH BEI
		Cyclohexanol	Urine	End of shift (As soon as possible after exposure ceases)	8 mg/l	ACGIH BEI

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. Wear a face-shield which allows use of chemical goggles, or wear a full-face respirator, to protect face and eyes when there is any likelihood of splashes.

Skin protection

Hand protection: Use gloves, chemically resistant to this material, at all times. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Chlorinated polyethylene. 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 chemical protective clothing resistant to this material, when there is any possibility of skin contact.

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	Tan
Odor	Mild
Odor Threshold	No data available
pH	4.7 *CIPAC MT 75.3*
Melting point/range	Not applicable
Freezing point	No data available
Boiling point (760 mmHg)	No data available
Flash point	**closed cup** 67.5 °C (153.5 °F) *CIPAC MT 12.3*
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	No data available
Relative Vapor Density (air = 1)	No data available
Relative Density (water = 1)	No data available
Water solubility	emulsifiable
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Dynamic Viscosity	34.3 mPa.s at 20 °C (68 °F) 15.7 mPa.s at 40 °C (104 °F)
Kinematic Viscosity	No data available
Explosive properties	No
Oxidizing properties	No significant increase (>5C) in temperature.
Liquid Density	0.989 g/ml*EC Method A3*
Molecular weight	No data available

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

10. STABILITY AND REACTIVITY

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

Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

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: Acids. Amines. 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 fluoride. Nitrogen oxides. Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

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.

For similar material(s):
LD50, Rat, female, > 5,000 mg/kg

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

For similar material(s):
LD50, Rabbit, male and female, > 5,000 mg/kg

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.

For similar material(s):
LC50, Rat, male and female, 4 Hour, dust/mist, > 5.41 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation
Brief contact may cause moderate skin irritation with local redness.
May cause peeling of the skin.

Serious eye damage/eye irritation
May cause slight eye irritation.
May cause slight corneal injury.

Sensitization
For skin sensitization:
For similar material(s):
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):
In animals, effects have been reported on the following organs:
Adrenal gland.
Blood.
Gall bladder.
Kidney.
Liver.
Thyroid.

For the minor component(s):
In animals, effects have been reported on the following organs:
Central nervous system.
Kidney.
Liver.
Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

Carcinogenicity
For the active ingredient(s): Did not cause cancer in laboratory animals.

Teratogenicity
For the active ingredient(s): Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

For the minor component(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

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

For the minor component(s): Cyclohexanone caused reduced growth and survival of offspring in an animal reproduction study. Dose levels producing this effect also caused central nervous system effects in parental animals. In animal studies, has been shown to interfere with reproduction in males. Effects have been seen only at doses that produced significant toxicity to the parent animals.

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

For the minor component(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 physical properties, not likely to be an aspiration hazard.

Carcinogenicity

Component	**List**	**Classification**
Cyclohexanone	ACGIH	A3: Confirmed animal carcinogen with

unknown relevance to humans.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to fish
For similar material(s):
LC50, Cyprinus carpio (Carp), semi-static test, 96 Hour, 3.0 mg/l, OECD Test Guideline 203

Acute toxicity to aquatic invertebrates
For similar material(s):
EC50, Daphnia magna (Water flea), semi-static test, 48 Hour, 4.9 mg/l, OECD Test Guideline 202

Acute toxicity to algae/aquatic plants
For similar material(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).

For similar material(s):
ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, 0.15 mg/l, OECD Test Guideline 201

Persistence and degradability

Dithiopyr
Biodegradability: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Cyclohexanone
Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 87 %
Exposure time: 14 d
Method: OECD Test Guideline 301C or Equivalent
10-day Window: Pass
Biodegradation: 90 - 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Theoretical Oxygen Demand: 2.61 mg/mg

Photodegradation
Test Type: Half-life (indirect photolysis)
Sensitization: OH radicals
Atmospheric half-life: 10.6 Hour
Method: Estimated.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Dithiopyr

Bioaccumulation: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
Partition coefficient: n-octanol/water(log Pow): 4.75 Measured

Cyclohexanone

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.81 Measured

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Dithiopyr

Expected to be relatively immobile in soil (Koc > 5000).
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.
Partition coefficient (Koc): 20500

Cyclohexanone

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 15 Estimated.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

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.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Combustible liquid, n.o.s.(Cyclohexanone)
UN number	NA 1993
Class	CBL
Packing group	III
Reportable Quantity	Cyclohexanone

Classification for SEA transport (IMO-IMDG):

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

Further information:
Marine Pollutants assigned UN number 3077 and 3082 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, IATA special provision A197, and ADR/RID special provision 375.

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.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Skin corrosion or irritation

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.

Pennsylvania Right To Know
The following chemicals are listed because of the additional requirements of Pennsylvania law:

Components	**CASRN**
Cyclohexanone	108-94-1

California Prop. 65
WARNING: This product can expose you to chemicals including Toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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: 62719-542
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 skin irritation
Causes moderate eye irritation
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Flammability	Instability
1	2	0

Revision
Identification Number: 97082988 / Issue Date: 08/16/2021 / Version: 2.1
DAS Code: GF-3621
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
Dow IHG	Dow Industrial Hygiene Guideline
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
SKIN	Absorbed via skin
STEL	Short-term exposure limit
TWA	Time Weighted Average (TWA):

Full text of other abbreviations
AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; 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

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.

CORTEVA AGRISCIENCE 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.
US

Specimen Label

DITHIOPYR	GROUP	3	HERBICIDE

CORTEVA™
agriscience

Dimension® 2EW

SPECIALTY HERBICIDE

Provides control of listed annual grasses and broadleaf weeds in:

- **Established lawns**
- **Commercial sod farms**
- **Ornamental and sports turf (including but not limited to sport fields, golf course fairways, roughs, tee boxes, unimproved turfgrass areas)**
- **Container grown ornamentals**
- **Field-grown ornamentals**
- **Landscape ornamentals**
- **Non-cropland such as: airports, barrow ditches, cemeteries, communication transmission lines, electrical power and utility rights-of-way, fencerows, gravel pits, hard-surface cracks, industrial sites, military lands, mining and drilling areas, non-irrigation ditch banks, gas and oil pads, parking lots, petroleum tank yards, pipelines, pump stations, railroads, roadsides, debris retention areas, service roads, solar fields, storage areas or yards, substations, vacant lots and other non-crop residential and commercial areas**
- **Natural areas (open space) such as: restoration sites, campgrounds, parks, prairie management, trails and trailheads, recreation areas, wildlife openings and wildlife habitat and management areas**
- **Christmas tree farms**

In New York State, this product may be used by commercial applicators only, at no more than 2 pints (0.5 lb active ingredient) per acre per year. In Nassau and Suffolk counties of New York, do not exceed 1 pint per acre per year of this product (equivalent to 0.25 lb of active ingredient per acre).

Active Ingredient	
dithiopyr: S,S'-dimethyl 2-(difluoromethyl)-4-(2-methylpropyl)-6-(trifluoromethyl)-3,5-pyridinedicarbothioate	24%
Other Ingredients	76%
Total	100%

Contains petroleum distillates
Contains 240 grams per liter or 2 lb active ingredient per U.S. gallon.

Precautionary Statements

Hazards to Humans and Domestic Animals

EPA Reg. No. 62719-542

Keep Out of Reach of Children

WARNING

Causes Skin Irritation • Causes Moderate Eye Irritation • Prolonged Or Frequently Repeated Skin Contact May Cause Allergic Reactions In Some Individuals

Do not get on skin or on clothing. Avoid contact with eyes. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

Personal Protective Equipment (PPE):

WPS Uses: Applicators and other handlers who handle this product for any use covered by the Worker Protection Standard (40 CFR Part 170) – in general, agricultural plant uses are covered - must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves ≥14 mils made of barrier laminate or butyl rubber
- Chemical-resistant footwear plus socks

WPS Uses: Mixers and loaders must wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves ≥14 mils made of barrier laminate or butyl rubber
- Chemical-resistant footwear plus socks
- Chemical-resistant apron

Non-WPS Uses: Applicators and other handlers, mixers and loaders who handle this product for any use NOT covered by the Worker Protection Standard (40 CFR Part 170) – in general, agricultural plant uses are covered - must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves >14 mils made of barrier laminate or butyl rubber

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them. Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Controls

When handlers use closed systems or enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

If on skin or on clothing: 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.
If in eyes: Hold eye 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 eye. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-992-5994 day or night, for emergency treatment information.

Note to Physician: Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

Environmental Hazards

This product is toxic to fish and highly toxic to other aquatic organisms including oysters and shrimp. Use with care when applying to turf areas adjacent to any body of water. Drift and runoff from treated turf may be hazardous to aquatic organisms in water adjacent to treated areas. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Non-Target Organism Advisory: This product is toxic to plants and may adversely impact the forage
and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift. For further guidance and instructions on how to minimize spray drift, refer to the Spray Drift Management section of this label.

Ground Water Advisory: This pesticide has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory: This pesticide may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soil and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip beween areas to which this product is applied and surface water features such as ponds, streams and springs will reduce the potential load of dithiopyr from run off water and sediment.

Directions for Use

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Read all Directions for Use carefully before applying.

REFORMULATION OR REPACKAGING OF THIS PRODUCT IS PROHIBITED.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on the label about personal protective equipment, restricted-entry interval, and notification to workers (as applicable). The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

For early entry into treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, wear:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves ≥14 mils made of barrier laminate or butyl rubber
- Chemical-resistant footwear plus socks

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

- Keep unprotected persons out of treated area until sprays have dried.

Storage and Disposal

Do not contaminate water, food, or feed by storage and disposal.
Pesticide Storage: Store this product only in its original container in a dry, cool, secured storage area. Store this product above 32°F to avoid crystallization. If crystals form or product freezes, move product to area with ambient temperature above 32°F and shake well until crystals have dissolved.
Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Nonrefillable containers 5 gallons or less:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Storage and Disposal (Cont.)

Refillable containers larger than 5 gallons:
Container Handling: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

Nonrefillable containers larger than 5 gallons:
Container Handling: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.
Triple rinse or pressure rinse container (or equivalent) promptly after emptying. **Triple rinse** as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Product Information

Dimension® 2EW specialty herbicide provides control of crabgrass and other annual grasses and broadleaf weeds in established lawns, commercial sod farms, ornamental and sports turf (including but not limited to sport fields, golf course fairways, roughs, tee boxes, unimproved turfgrass areas), container-grown ornamentals, field-grown ornamentals, landscape ornamentals, non-cropland (see list above), natural areas and Christmas trees.

This product will not control established weeds, except for crabgrass in early stages of growth. For optimum control, applications of this product should be made preemergence (prior to germination of target weeds).

This product is most effective when activated by 1/2 inch or more of rainfall or irrigation. To optimize control, ensure that activation has occurred prior to germination of most grass and broadleaf weeds.

Chemigation: Do not apply this product through any type of irrigation system.

Mixing Directions

Dimension 2EW Alone with Water as the Carrier

Fill a previously cleaned spray tank with water to about three-fourths of the desired volume. Add the recommended amount of Dimension 2EW to the tank. Complete the filling process while maintaining agitation. Remove the hose from the mixing tank immediately after filling to avoid siphoning back into the water source.

Dimension 2EW Alone with Liquid Fertilizer as the Carrier

Determine the compatibility of Dimension 2EW with the desired liquid fertilizer by mixing small proportional quantities in advance. See the Physical Compatibility Test section of this label. Then follow the mixing procedure listed below for tank mixtures.

Tank Mixtures

Dimension 2EW may be applied in tank mix combination with labeled rates of liquid fertilizers or other herbicides, such as but not limited to Gallery, Defendor and Accord XRT II, provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product. Read carefully and follow all applicable use directions, precautions, and limitations on the respective product labels. When tank mixing, use the most restrictive label limitations for each of the products being used in the tank mix.

When tank mixing Dimension 2EW with other materials, a compatibility test (jar test) using relative proportions of the tank mix ingredients should be conducted prior to mixing ingredients in the spray tank. See the Physical Compatibility Test Mixing Instructions section of this label.

Mixing Order for Tank Mixes: Place a 20 to 35 mesh screen or wetting basket over the filling port. Fill the spray tank 1/2 full with the appropriate carrier. Start agitation. Slowly add different formulation types in the order indicated below, allowing time for complete dispersion and mixing after addition of each product.

1. Compatibility agent (if needed)
2. Wettable powder or water dispersible granules (if used)
3. Suspension concentrates
4. Dimension 2EW and liquid (emulsifiable concentrate or liquid concentrate) pesticide (if used)
5. Water soluble liquid products
6. Surfactants, marker dyes or drift control additives

Maintain an air buffer between the hose and the solution in the tank to avoid siphoning back into the carrier source. Maintain continuous agitation during mixing and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed.

Premixing: Dry and flowable formulations should be premixed with water in a slurry and added to the spray tank through a 20 to 35 mesh screen. This procedure assures good initial dispersion of these formulation types.

Physical Compatibility Test

Before mixing this product with liquid fertilizers and/or other pesticides, test compatibility by mixing all the components in a small jar in proportionate quantities:

Compatibility Test Mixing Instructions

Pesticide Formulation	If Rate per Acre is:	Amount of Pesticide added to Spray Carrier (assuming volume is 25 gpa) Add: Level Teaspoons per Pint Jar of Carrier Solution
Dry	1 lb	1 1/2
Liquid	1 qt	1

This compatibility test is designed for 25 gallons of spray solution per acre (gpa). The table above gives general guidelines for use rate ratios of pesticides to be tank mixed with this product. Determine the amount of pesticide to tank mix by referring to the pesticide label(s). Then, calculate the amount of pesticide to add to the jar based on use rate ratios in table. For a use rate of 1 lb per acre of dry pesticide, add 1 1/2 teaspoons to the jar. For a use rate of 1 quart per acre of liquid pesticide, add 1 teaspoon to the jar. Dimension 2EW should be added based on use rate ratios for liquid pesticides (for a use rate of 1 quart per acre, add 1 teaspoon to the jar). For changes in spray volume or herbicide rate, make appropriate changes in the ingredients for the test. Shake well after mixing.

If pesticide mix does not form crystals, flakes, sludge, gels, oily films or layers, then the components are compatible. Incompatibility in any of the above-described forms will usually occur within 5 minutes after mixing. If components are incompatible, a compatibility agent should be used. Repeat the above compatibility test with a suitable compatibility agent (1/2 teaspoon per pint jar is equivalent to 2 pints per 100 gallons of spray solution). Do not use mixtures that show incompatible signs such as formation of crystals, flakes, sludge, gels, oil films or layers.

Grass and Broadleaf Weeds Controlled by Dimension 2EW

Used as directed, Dimension 2EW controls annual grass and broadleaf weeds listed in the table below if applied preemergence. This product will not control emerged broadleaf weeds or grasses (except for crabgrass in early stages of growth).

Common Name	Scientific Name
Grasses	
barley	*Hordeum* spp.
barnyardgrass	*Echinochloa crus-galli*
bluegrass, annual	*Poa annua*
brome	*Bromus* spp.
crabgrass, large	*Digitaria sanguinalis*
crabgrass, smooth	*Digitaria ischaemum*
crabgrass, southern	*Digitaria ciliaris*
crowfootgrass	*Dactyloctenium aegyptium*
dallisgrass (seedling)	*Paspalum dilatatum*
foxtail, giant	*Setaria faberi*
foxtail, green	*Setaria verdi*
foxtail, yellow	*Setaria pumilia*
goosegrass	*Eleusine indica*
kikuyugrass	*Pennisetum clandestinum*
Mary's grass (Japanese stiltgrass)	*Microstegium vimineum (Trin.) A.Camus var. imberbe*
oats, wild	*Avena fatua*
ryegrass (annual & perennial)	*Lolium* spp.
sandbur	*Cenchrus* spp.
smutgrass	*Sporobolus indicus*
southwestern cupgrass	*Eriochloa gracilis*
Broadleaf Weeds	
bittercress	*Cardamine* spp.
carpetweed	*Mollugo verticillata*
chickweed	*Stellaria* spp.
dandelion, common	*Taraxacum officinale*
geranium, Carolina	*Geranium carolinianum*
henbit	*Lamium* spp.
knotweed, prostrate	*Polygonum aviculare*
lespedeza, common	*Lespedeza striata*
marestail	*Conyza canadensis*
medic, black	*Medicago lupulina*
mulberry weed	*Fatoua villosa*
mustard	*Brassica* spp.
oxalis, buttercup	*Oxalis pes-caprae*
parsley-piert	*Alchemilla arvensis*
pigweed, redroot	*Amaranthus retroflexus*
pineappleweed	*Matricaria matricarioides*
purslane, common	*Portulaca oleracea*
rocket, London	*Sisymbrium irio*
shepherdspurse	*Capsella bursa-pastoris*
sowthistle	*Sonchus oleraceus*
speedwell, corn	*Veronica arvensis*
spurge, garden	*Euphorbia hirta*
spurge, prostrate	*Euphorbia humistrata*
spurge, spotted	*Euphorbia maculata*
willowherb	*Epilobium* spp.
woodsorrel, creeping	*Oxalis corniculata*
woodsorrel, yellow	*Oxalis stricta*

Weed Resistance Management

Dithiopyr, the active ingredient in this product, is a Group 3 herbicide based on the mode of action classification system of the Weed Science Society of America. Any weed population may contain or develop plants naturally resistant to this product and other Group 3 herbicides. The resistant weeds may dominate the weed population if these herbicides are used repeatedly in the same field. Such resistant weed plants may not be effectively managed using Group 3 herbicides but may be effectively managed utilizing other herbicides alone or in mixtures from different herbicide Groups that are labeled for control of these weeds and/or by using cultural or mechanical practices. However, a herbicide mode of action classification by itself may not adequately address specific weeds that are resistant to specific herbicides.

To delay herbicide resistance:

- Rotate the use of Dimension 2EW or other Group 3 herbicides in successive seasons with different herbicide groups that control the same weeds in a field.
- Where possible, rotate the use of Dimension 2EW or other herbicides with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group if such use is permitted. Where information on resistance in target weed species is available, use the less resistance-prone partner at a rate that will control the target weed(s) equally as well as the more resistance-prone partner. Consult your local extension service or certified crop advisor if you are unsure as to which active ingredient is currently less prone to resistance.
- Adopt an integrated weed management program for herbicide use that includes scouting and uses historical information related to herbicide use and crop rotation, and that considers tillage (or other mechanical control methods), cultural (e.g. higher crop seeding rates; precision fertilizer application method and timing to favor the crop and not the weeds); biological (weed competitive crops or varieties) and other management practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by equipment and planting clean seed.
- Contact your local extension specialist or certified advisers for any additional pesticide resistance management and/or integrated weed management requirements for specific weed biotypes.
- Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other

fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.
- If a weed pest population continues to progress after treatment with this product, discontinue use of this product, and switch to another management strategy or herbicide with a different mode of action, if available.

For further information or to report suspected resistance, contact a Corteva representatives at 1-800-258-3033.

Best Management Practices
Proactively implementing diversified weed control strategies to minimize selection for weed populations resistant to one or more herbicides is recommended. A diversified weed management program may include the use of multiple herbicides with different modes of action and overlapping weed spectrum with or without tillage operations and/or other cultural practices. Research has demonstrated that using the labeled rate and directions for use is important to delay the selection for resistant weeds. Scouting after a herbicide application is important because it can facilitate the early identification of weed shifts and/or weed resistance and thus provide direction on future weed management practices. One of the best ways to contain resistant weed populations is to implement measures to avoid allowing weeds to reproduce by seed or to proliferate vegetatively. Cleaning equipment between sites and avoiding movement of plant material between sites will greatly aid in reducing the spread of resistant weed seed.

Mandatory Spray Drift Management

Boomless Ground Applications:
- Applicators are required to select the nozzle and pressure that deliver a medium or coarser droplet size (ASABE S572).
- Do not apply when wind speeds exceed 15 miles per hour at the application site.
- Do not apply during temperature inversions.

Spray Drift Advisories

THE APPLICATOR IS RESPONSIBLE FOR AVOIDING OFF-SITE SPRAY DRIFT. BE AWARE OF NEARBY NON-TARGET SITES AND ENVIRONMENTAL CONDITIONS.

Importance Of Droplet Size
An effective way to reduce spray drift is to apply large droplets. Use the largest droplets that provide target pest control. While applying larger droplets will reduce spray drift, the potential for drift will be greater if applications are made improperly or under unfavorable environmental conditions.

- Volume - Increasing the spray volume so that larger droplets are produced will reduce spray drift. Use the highest practical spray volume for the application. If a greater spray volume is needed, consider using a nozzle with a higher flow rate.
- Pressure - Use the lowest spray pressure recommended for the nozzle to produce the target spray volume and droplet size.
- Spray Nozzle - Use a spray nozzle that is designed for the intended application. Consider using nozzles designed to reduce drift.

Shielded Sprayers
Shielding the boom or individual nozzles can reduce spray drift. Consider using shielded sprayers. Verify that the shields are not interfering with the uniform deposition of the spray on the target area.

Temperature And Humidity
When making applications in hot and dry conditions, use larger droplets to reduce effects of evaporation.

Temperature Inversions
Drift potential is high during a temperature inversion. Temperature inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. The presence of an inversion can be indicated by ground fog or by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Avoid applications during temperature inversions.

Wind
Drift potential generally increases with wind speed. AVOID APPLICATIONS DURING GUSTY WIND CONDITIONS.

Applicators need to be familiar with local wind patterns and terrain that could affect spray drift.

Boomless Ground Applications:
- Setting nozzles at the lowest effective height will help to reduce the potential for spray drift.

Handheld Technology Applications:
- Take precautions to minimize spray drift.

Uses

Turfgrass

Use Dimension 2EW on seeded, sodded, or sprigged lawns, ornamental turfgrass and unimproved turfgrass that are well established. Newly established turf must have developed a good root system and a uniform stand, and have received at least two mowings following seeding or sprigging before making the first application of this product. Note precautions below for sodding. Use of this product on turf that is not well-established, or has been weakened by weather, pest, disease, chemical, mechanical, or other related stress, may result in turf injury.

Use Precautions:
- Dimension 2EW will prevent the germination of annual bluegrass. Dimension 2EW will not affect established annual bluegrass. If maintenance of annual bluegrass is desired, using this product during the time of annual bluegrass germination is not recommended. In the states of AZ, CA, NV, OR, WA, NM, ID, MT and UT, Dimension 2EW may contribute to the thinning or stand reduction in established stands of annual bluegrass.
- To avoid turfgrass injury, do not apply to newly set sod until the sod has rooted and exposed edges have filled in.
- For best results, cultural practices that disturb the soil, such as verticutting and core-, spike-, or hydro-aerification, should be done before applying this product.

Use Restrictions:
- Do not apply this product to golf course putting greens.
- Do not harvest sod until 3 months or longer after application.
- Do not apply this product until the turfgrass has recovered from cultural practices such as verticutting or core-, spike-, or hydro-aerification.
- Do not use clippings from treated turf for mulching around vegetables or fruit trees.
- Do not apply this product through any type of irrigation system.
- Do not apply more than 2 pints (0.5 lb ai/acre) of Dimension 2EW per acre (0.73 fl oz per 1000 sq ft) per application.
- Do not apply more than 6 pints (1.5 lb/ai/acre) of Dimension 2EW per acre per year (2.2 fl oz per 1000 sq ft).
- In New York State, do not apply more than 2 pints of Dimension 2EW (0.5 lb active ingredient) per acre per year. In Nassau and Suffolk counties of New York, do not exceed 1 pint per year of this product (equivalent to 0.25 lb of active ingredient per acre).

Reseeding, Overseeding, or Sprigging

Reseeding, overseeding or sprigging of treated areas within 3 months after a single application of this product, or within 4 months after a sequential application program totaling more than 2 pints per acre (0.73 oz per 1000 sq ft), may inhibit the establishment of desirable turfgrasses. However, overseeding of bermudagrass with perennial ryegrass 8 weeks after an application or as early as 6 weeks after application if slight injury to perennial ryegrass can be tolerated is a recommended exception.

When reseeding or overseeding, proper cultural practices such as soil cultivation, irrigation and fertilization should be followed. For best results, use mechanical or power seeding equipment (slit seeders) designed to give good seed to soil contact.

Tolerant Turfgrass

Dimension 2EW should only be applied to the following turfgrass species which are tolerant to this product.

Established Cool Season Turfgrasses

Common Name	Scientific Name
bentgrass, creeping†	*Agrostis palustris*
bluegrass, Kentucky	*Poa pratensis*
fescue, fine††	*Festuca rubra*
fescue, tall	*Lolium arundinaceum*
ryegrass, perennial	*Lolium perenne*

Established Warm Season Turfgrasses

Common Name	Scientific Name
bahiagrass	*Paspalum notatum*
bermudagrass†††	*Cynodon dactylon*
buffalograss††††	*Buchloe dactyloides*
carpetgrass	*Axonopus affinis*
centipedegrass	*Eremochloa ophiuroides*
kikuyugrass	*Pennisetum clandestinum*
seashore paspalum	*Paspalum vaginatum*
St. Augustinegrass	*Stenotaphrum secundatum*
zoysiagrass	*Zoysia japonica*

† Do not use this product on certain varieties of creeping bentgrass, such as cohansey, carmen, seaside, and Washington as undesirable turfgrass injury may result. Not all varieties of creeping bentgrass have been tested. Do not apply this product to colonial bentgrass (*Agrostis tenuis*) varieties.

†† Do not use this product on certain varieties of fine fescue as undesirable turf injury may result. The following fine fescue varieties have been found to be sensitive to this product: Atlanta, banner, beauty, bilgart, CF-2, enjoy, HF-93, highlight, ivalo, Jamestown, koket, majenta, Mary, pennlawn, Tamara, Tatjana, waldorf, and waldina. Not all varieties of fine fescue have been tested.

††† Do not use this product on Tifgreen (328) hybrid bermudagrass as undesirable turfgrass injury may result. Other common and hybrid bermudagrass varieties are tolerant.

†††† Do not use this product on seedling buffalograss in the spring of the first year of establishment until the turfgrass is fully green and has established new roots.

Application Directions

Apply Dimension 2EW through conventional liquid application equipment in a minimum of 20 gallons of water per acre (0.5 gallons per 1000 sq. ft.). Apply with equipment that provides a uniform spray distribution. A handheld spray gun may be used. Calibrate application equipment prior to usage. Avoid streaking, skips, or excess overlaps during application. The use of marker dyes or foams aids in making more accurate applications.

Preemergence Application Rates, Frequency and Timing

For preemergence grass and broadleaf weed control, apply Dimension 2EW as single or sequential application at 1 to 2 pints (0.25 to 0.5 lb active ingredient) per acre. Applicators may choose to make a single application or sequential applications of 1 to 2 pints per acre at 5 to 10 week intervals based on one or more of the factors listed below.

- Length of residual weed control desired
- Height of turf (lower cut turf may require higher use rates)
- History and success of weed control at the application site (higher application rates should be used if herbicide treatment history is unknown or weed control was poor with previous applications)
- Exposure to high temperatures and heavy rainfall or irrigation (this will shorten the residual preemergence performance)
- On turf sites adjacent to hard surfaces such as but not limited to driveways, sidewalks and parking lots where residual activity may be reduced
- Some target weed species (such as but not limited to *Poa annua*, goosegrass and sandbur) will require higher use rates

Postemergence Crabgrass Control

This product provides both preemergence and postemergence control of crabgrass (including large, smooth, and southern species) in established lawns and ornamental turf. This product provides postemergence control of crabgrass through the 3 to 5 tiller stage of growth dependent upon location. The addition of a nonionic surfactant at a minimum of 0.25% v/v (2 pt per 100 gallons of spray) is recommended to improve postemergence control past the 5 leaf stage of growth. Read and follow the surfactant manufacturer's label directions. Postemergence control of this product can be improved by not mowing turfgrass within two days before or after application.

When applied at 2 pints per acre this product has demonstrated postemergent crabgrass control through the 3 to 5 tiller stage of growth in the western, southern and transition regions where warm-season turfgrasses are the predominate species.

In regions where cool-season turfgrasses are the predominant species, early postemergence crabgrass control is obtained when this product is applied prior to tiller initiation of crabgrass (less than 5 leaves per plant), which generally corresponds to the time when crabgrass seedlings are easily observed in lawn or turf.

For preemergence residual control of crabgrass, apply at least 0.5 inch of water after application; but in order to optimize postemergence control delay irrigation for 6 hours after application.

Poa annua (annual bluegrass) Control

Apply Dimension 2EW for preemergence control of *Poa annua* (annual bluegrass) at a rate of 1.5 to 2 pints (0.38 to 0.5 lbs active ingredient) per acre.

- Apply 6 to 8 weeks before overseeding perennial ryegrass into bermudagrass. This is specific to perennial ryegrass; not recommended for *Poa trivialis* or bentgrass.
- Minimum seeding rate of perennial ryegrass is 400 lbs per acre.
- Use limited to fairways and roughs.
- Perennial varieties of *Poa annua* (var. repens) may not be controlled as well as the true annual variety.
- Do not apply earlier than 16 weeks after over-seeding unless injury to the ryegrass can be tolerated.
- A follow-up treatment 16 weeks after overseeding offers an early season crabgrass treatment and helps suppress some winter annual broadleaf weeds.

Goosegrass Control

For best results, apply Dimension 2EW at 2 pints (0.5 lbs active ingredient) per acre just prior to goosegrass germination. Base the application timing on local experience or soil temperatures. If targeting both crabgrass and goosegrass, a single application applied at preemergence crabgrass timing may not be adequate. When targeting both crabgrass and goosegrass it is best to make sequential applications. Based on past experience and crabgrass pressure, a lower rate may be used for the first application with the sequential application being made at 2 pints per acre.

Use Directions for Noncropland and Natural Areas

Apply Dimension 2EW for preemergence control of listed annual grasses and broadleaf weeds in non-crop land (see listing above) and natural areas as a single or sequential application.

Apply Dimension 2EW prior to germination of target weeds or to bare ground. The best weed control is obtained when applications are made preemergence and to soil that is free of clods, weeds, and debris such as leaves. For total vegetation control tank mixing this product with herbicides such as Accord XRT II, Opensight or Milestone is necessary.

To be effective, Dimension 2EW must be activated by 0.5 inch or more of rainfall or irrigation prior to germination of target weeds. Once the treatment is activated, avoid excessive soil disruption such as grading roadsides that may break down the herbicide barrier. Minimal surface disruption such as raking should not break down the herbicide barrier.

Use Precautions:

- For ornamentals within non-crop areas, apply only after transplanting when soil around roots has been thoroughly settled by rainfall or irrigation and no cracks are present, and only to plants listed in the Tolerant Ornamental section of this label, or injury may result.

Use Restrictions:

- Do not apply when weather conditions favor drift to non-target areas. This product may injure foliage of non-target plants.
- Do not graze livestock or feed forage cut from areas treated with this product.

Equivalent Application Rates:

Equivalent Rates of Dimension 2EW			
(pt/acre)	(fl oz/1000 sq ft)	(fl oz/100 sq ft)	(ml/100 sq ft)
2	0.73	0.073	2.2

Make sequential applications at 3 to 4 month intervals for extended preemergence weed control. Do not exceed maximum use rates per year

Maximum Use Rates

- **Split or sequential applications:** Do not use more than 0.73 oz of Dimension 2EW per 1000 sq ft (2 pints per acre) per application or more than 2.2 oz of Dimension 2EW per 1000 sq ft (6 pints per acre) per year.

Use Directions For Ornamentals (Landscape, Field Grown, and Container Grown) and Christmas Trees

Dimension® 2EW specialty herbicide provides preemergence control of listed annual grasses and broadleaf weeds in areas planted with tolerant ornamental plants listed on this label. It is intended for use on plants grown for aesthetic purposes in landscaped areas, in container or field grown production nurseries or in Christmas tree production. When applied as directed, the ornamental plants listed on this label have shown tolerance to applications of Dimension 2EW.

Use Precautions:

- Apply Dimension 2EW to established ornamentals only.
- Applications of Dimension 2EW over-the-top of plants with newly forming buds may cause injury. Possible plant injury may be avoided by application as a directed spray to the soil surface beneath ornamental plant foliage.
- Injury may be incurred if Dimension 2EW is applied in the following manner. Grower assumes all risk if Dimension 2EW is applied to:
    - o Unrooted liners or cuttings that have been planted in pots for the first time
    - o Pots less than six inches wide

Use Restrictions:

- Do not apply this product to bare roots of ornamental plants as injury may result.
- Do not incorporate this product into the soil. Dilution of active ingredient and possible injury to plant roots may occur.
- Do not apply around ornamental plants that have been weakened or are under stress (due to drought, flooding, excessive fertilizer or soil salts, wind injury, hail, frost damage, winter injury, injury from previously applied pesticides or injury due to insects, heat stress, nematodes, or diseases).
- Do not apply when weather conditions favor drift to non-target areas. This product may injure foliage of non-target plants unless they are listed on this label.
- Do not apply this product directly to plants that are grown for food (e.g., fruit trees or maple trees tapped for syrup).
- Do not apply this product in enclosed structures and greenhouses.
- Do not apply more than 2 pints (0.5 lb/ai/ac) of Dimension 2EW per acre (0.73 fl oz per 1000 sq ft) per application and no more than 6 pints (1.5 lb/ai/ac) of Dimension 2EW per acre (2.2 fl. oz per 1000 sq ft) per year.
- In New York State, do not apply more than 2 pints of Dimension 2EW (0.5 lb active ingredient) per acre per year. In Nassau and Suffolk counties of New York, do not exceed 1 pint per year of this product (equivalent to 0.25 lb of active ingredient per acre).

Shadehouse Areas
Dimension 2EW may be applied in open shadehouse-type structures where the natural flow of air is unimpeded. Do not apply within three weeks prior to enclosing greenhouses or poly-type structures.

Treatment of Ornamental Species Not Listed on the Label for Dimension 2EW: It is impossible to evaluate tolerance to this product on all ornamental plant species or varieties or under all possible growing conditions. Users who wish to use Dimension 2EW on ornamental species not currently listed on this label may determine the suitability for use by treating a small number of ornamental plants at a recommended rate. Prior to treatment of larger areas, treated plants should be observed for any symptoms of herbicidal injury, such as foliar damage, reduced vigor or stand reduction, for 30 to 60 days of normal growing conditions to determine if the treatment is acceptable to the grower. The user assumes the responsibility for any plant damage resulting from the use of Dimension 2EW on plant species not currently listed on this label as tolerant.

Application Directions

Apply Dimension 2EW as a directed spray or as a broadcast over-the-top spray to established ornamentals (see ornamental plant listing for acceptable application method). Make directed sprays to the soil at the base of the ornamentals.

To reduce injury potential:

- Apply to established ornamentals
- Apply product with calibrated equipment using a minimum of 1 gallon of water per 1000 sq. ft.
- Shortly after application apply overhead irrigation to activate the herbicide and wash Dimension 2EW from plant surface onto soil surface.
- In the spring when buds are rapidly growing and expanding, over the top application of Dimension 2EW may temporarily injure new growth of desirable plants. To reduce the possibility of injury at this time, wait to apply Dimension 2EW over the top of newly emerged vegetation until it has hardened off, unless local experience indicates that the ornamental plant will not be injured by the over the top application.
- Do not apply to plants that are under stress such as heat, drought, or frost damage.

Dimension 2EW is a preemergence herbicide that controls weeds during germination. Dimension 2EW does not control emerged broadleaf or grass weeds except crabgrass up to tiller initiation (up to 5 leaves per plant) in ornamental or bare ground settings. Apply prior to germination of target weeds. Optimum weed control is obtained when applications are made to soil that is free of clods, weeds, and debris such as leaves. Prior to applying, control existing vegetation by cultivation, hand weeding, or use of a postemergence herbicide labeled for use in ornamentals. After applying Dimension 2EW, excessive soil disruption may breakdown the herbicide barrier. Minimal surface disruption such as raking should not break down the herbicide barrier once the product has been activated with moisture. Following transplanting, care must be taken that soil or planting mixes have settled firmly through irrigation, rainfall or packing and that there are no cracks that would allow direct contact of this product to the plant roots or plant injury may occur.

Application Rates

Apply Dimension 2EW prior to germination of target weed species. Make sequential applications at 3 to 4 month intervals for extended preemergence weed control. Do not exceed maximum use rates per year.

When treating a small area, apply Dimension 2EW with a calibrated sprayer that assures accurate, uniform spray distribution. In general, Dimension 2EW should be thoroughly mixed with water at 1.5 to 2 pints (0.5 to 0.73 oz of product per 1000 sq ft) per acre per application and applied at 20 to 40 psi in a minimum of 1 gallon of water per 1000 sq ft.

Equivalent Rates of Dimension 2EW			
(pt/acre)	**(fl oz/1000 sq ft)**	**(fl oz/100 sq ft)**	**(ml/100 sq ft)**
2	0.73	0.073	2.2

Tolerant Ornamentals

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
abelia *(Abelia x grandiflora)*	nana grand surprise	 x	x x
acacia, redolens *(Acacia redolens)*		x	x
abyssinian red banana *(Ensete ventricosum)*	maureli	x	x
Agave† *(Agave bovicornuta)* *(A. gypsophila* *(A. victoriae-reginae)* *(A. vilmoriniana)*	blue glow Queen Victoria royal	x x x x x x	x x x x x x
Ajuga carpet bugle *(Ajuga reptans)* *(Ajuga genevensis)*	 bronze bronze beauty		 x x
almond, flowering *(Prunus gladulosa)*			x
apple† *(Malus pumila)*			x
aralia, Japanese *(Fatsia japonica)*			x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
arborvitae *(Thuja occidentalis)*	George Peabody nigra pyramidalis smaragh techny woodwardii	x	x x x x x x
arborvitae, dwarf golden *(Thuja orientalis)*	aurea nana	x	x
ash, green *(Fraxinus pennsylvanica)*			x
ash, autumn purple *(Fraxinus americana)*	autumn purple		x
aster, Chinese *(Callistephus chinensis)*	dwarf queen		x
azalea *(Rhododendron* spp.*)*	brilliant buccaneer carror chimes (Belgian) Elsie Lee exbury fashion Girard's crimson hardijzer beauty hershey red higasa hinocrimson high tide Holland (hybrid) Marion Lee northern lights Nuccio's Wild Cherry orange cup orchid lights pink gumbo pride of Mobile snow southern charm	x x x	x x x x x x x x x x x x x x x x x x x x x x x x x
azalea, flame *(Rhododendron calendulaceum)*			x
azalea, Kurume or kirishima *(Rhododendron obtusum)*	coral bells	x	x x
bamboo, heavenly *(Nandina domestica)*	compacta nana plum passion	x	x x x
banana shrub *(Michelia figo)*		x	x
barberry, Japanese *(Berberis thunbergii)*	aurea crimson pygmy dwarf pygmy green kobold pygmy red rose glow	x	x x x x x x x
barberry, purple (*Berberis thunbergii* var atropurpurea)	atropurpurea		x
basket flower *(Gaillardia grandiflora)*			x
beach grass *(Ammophila breviligulata)*			x
bearberry (common) *(Arctostaphylos uva-ursi)*	Massachusetts		x
bee balm *(Monarda didyma)*			x
begonia *(Begonia* spp.*)*			x
birch, river *(Betula nigra)*	dura heat	x	x
birch, European white *(Betula pendula)*			x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
blackeyed Susan *(Rudbeckia hirta)*	goldstrum		x
blanket flower *(Gaillardia* spp.)			x
blood grass *(Imperata cylindrica)*	rubra	x	x
blue fescue *(Festuca ovina)*			x
bluebeard *(Caryopteris x clandonensis)*	dark knight	x	x
blueberry† *(Vaccinium* spp.*)*	bluecrop blue jay Jersey north blue northland		x x x x x
bottlebrush *(Callistemon citrinus)*	Little John	x	x
bougainvillea *(Bougainvillea sp.)*	James Walker pink dream purple queen rosenka Scarlet O' Hara	 x x x	x x x x x
bower vine *(Pandorea jasminoides)*	rosea	x	x
boxwood, green beauty *(Buxus microphylla japonica)*	green beauty	x	x
boxwood, welleri *(Buxus sempervirens)*	winter gem common boxwood	x x	x x
broom *(Cytisus scoparius)* *(Genista pilosa)*	 moonlight Vancouver gold		 x x
cactus *(Echinocactus grusonii)*	golden barrel	x	x
camellia *(Camellia japonica)* *(Camellia sasanqua)*	 debutante mathotiana supreme chansonette setsukgekka	 x x x	 x x x x
candytuft *(Iberis sempervirens)*	snow white		x
carex, variegated *(Carex spp.)*		x	x
carpet bugle *(Ajuga reptans)* *(Ajuga genevensis)*	 bronze bronze beauty		 x x
cedar, red *(Juniperus virginiana)*			x
celosia *(Celosia* spp.)			x
centaura *(Centaurea montana)*			x
cherry tree† *(Prunus x yedoensis)*	yoshino	x	x
Chinese pistache *(Pistacia chinensis)*			x
chrysanthemum *(Chrysanthemum sp.)*	mandarin time	x	x
cleyera *(Cleyera japonica)*	Leann	x	x
clivia *(Clivia miniata)*		x	x
cockscomb, plumosa *(Celosia cristata)*	scarlet plumosa		x
coleus *(Coleus blumei)*	red kewpie		x
columbine *(Aquilegia* spp.)			x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
coneflower, purple *(Echinacea purpurea)*	 magnus purple	 x	x x
copper leaf *(Acalypha wilkesiana)*			x
coreopsis *(Coreopsis* spp.)	moonbeam		x
corn flower *(Centaurea* spp.)			x
cotoneaster *(Cotoneaster apiculatus)*			x
coyotebrush *(Baccharis pilularis)*			x
cycad *(Cycas revoluta)*			x
cypress, bald *(Taxodium distichum)*		x	x
cypress, Italian *(Cupressus sempervirens)*	glauca tiny tower	 x	x x
cypress, hinoki false *(Chamaecyparis obtusa)*	gracilis torulosa	 x	x x
cypress, leyland *(Cupressocyparis leylandii) hybrid*		x	x
daffodil *(Narcissus* spp.)	King Alfred		x
damianita *(Chrisactinia mexicania)*			x
daylilly *(Hemerocallis* spp.)	Aztec gold bright yellow (hybrid) single gold (evergreen) Wilson's yellow		x x x x
dianthus (sweet William) *(Dianthus* spp.) (Dianthus gratianopolitanus)	 firewatch	 x	x x
delphinium *(Delphinium* spp.)	magic fountain		x
desert spoon *(Dasilyrion wheeleri)*		x	x
dogwood *(Cornus florida)*			x
dogwood, American *(Cornus sericea)*	flavarimea		x
Douglas fir *(Pseudotsuga menziesii)*			x
dracaena *(Cordyline indivisa)* *(Cordyline australis)*		 x x	 x x
dusty miller *(Senecio cineraria)*		x	x
elm *(Ulmus parvifolia)*	drake		x
escallonia *(Escallonia x exonienis)*	 fradesi	 x	 x
eulaliagrass/maiden grass *(Miscanthus sinensis)*	gracillimus variegatus morning light	x x x	x x x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
euonymus			
(Euonymus fortunei)	Argenteo-variegata		x
	colorata		x
	emerald gaiety		x
	emerald n' gold		x
	gold edge		x
	golden princess		x
	tricolor		x
	vegetus		x
(Euonymus japonicus)	Aureomarginata		x
	microphylla variegata	x	x
	'Moness" silver princess	x	x
	silver king		x
(Euonymus kiatschovicus)	Manhattan	x	x
euryops, green leaved *(Euryops pectinatus)*	viridis	x	x
fan palm, European *(Chamaerops humilis)*			x
fan palm, Mexican *(Washingtonia robusta)*			x
fern (various) *(Asparagus spp.)*			x
fescue *(Festuca glauca)*			x
fescue, blue *(Festuca cinerea)*	Elijah blue		x
fetterbush *(Leucothoe fontanesiana)*	rainbow		x
ficus *(Ficus retusa)*	nitidia		x
fir fraser *(Abies fraseri)*			x
fortnight lily *(Moraea bicolor)*		x	x
Forsythia			
(Forsythia x 'Arnold Dwarf)	arnold dwarf		x
(Forsythia viridissima)	bronxensis dwarf		x
(Forsythia xintermedia)	lynwood gold		x
(Forsythia x 'Meadowlark')	meadowlark		x
(Forsythia x intermedia)	spring glory	x	x
(Forsythia suspensa)	weeping		x
fountain grass, purple *(Pennisetum setaceum)*	rubrum	x	x
fringe flower, Chinese *(Loropetalum chinense)*	ruby purple diamond	x	x
fuchsia *(Fuchsia spp.)*			x
galium *(Galium ordoratum)*			x
gardenia	August beauty	x	x
(Gardenia jasminoides)	Frost proof	x	x
	mystery		x
	radicans	x	x
	veitchii	x	x
	white gem	x	x
(Gardenia thunbergia)		x	x
Garlic, variegated society† *(Thulbaghia violacea)*	variegata	x	x
gayfeather *(Liatris spicata)*	floristan violet	x	x
gazania *(Gazania rigens leucolaena)*	trailing gazania	x	x
geranium *(Pelargonium x hortorum)*			x
globe thistle *(Echinops ritro)*		x	x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
gum *(Eucalyptus citriodora)*			x
hawthorn *(Crataegus spp.)*	cockspur white crimson cloud enchantress Jack Evans Washington white		x x x x x
hawthorn, Indian *(Rhaphiolepsis indica)*	ballerina enchantress	x x	x x
heather, twisted *(Erica cinerea)*	Mediterranean pink		x
heliotrope *(Heliotropum arborescens)*	lowa		x
hemlock, Canada *(Tsuga canadensis)*			x
hibiscus *(Hibiscus sp.)* *(Hibiscus rosa-sinensis)*	blue bird brilliant hula girl Seminole pink		x x x x
holly *(Ilex x 'Nellie R. Stevens')* *(Ilex x attenuata)*	Nellie R. Stevens fosteri Savannah	x	x x x
holly, blue *(Ilex x meserveae)*	blue boy blue girl China girl		x x x
holly, cassine *(Ilex cassine)*		x	x
holly, Chinese *(Ilex comuta)*	Burfordii Carissa needlepoint	x x x	x x x
holly, Japanese *(Ilex crenata)*	compacta hellerie Japanese northern beauty sky pencil steeds	x x x	x x x x x
holly, yaupon *(Ilex vomitoria)*		x	x
honeysuckle *(Lonicera xylosteum)* *(Lonicera japonica)* *(Lonicera tatarica)* *(Lonicera x brownii)*	Claveyi dwarf halliana Canadian white Zabelli dropmore scarlet	 x	x x x x x
hop bush, purple *(Dodonea viscosa)*	purpurea	x	x
hosta (Hosta sieboldii) *(Hosta lancifolia)*	 albo marginata		x x
ice plant *(Carpobrotus edulis)*		x	x
ice plant, rosea *(Drosanthemum floribundum)*		x	x
ice plant, white trailing *(Delosperma alba)*		x	x
ice plant, purple *(Lampranthus productus)*		x	x
ice plant, red spike *(Cephalophyllumalstonii)*		x	x
impatiens *(Impatiens spp.)* *(I. balsamina)*		 x	x x
iris *(Iris spp)*	dwarf blue wedgewood		x x
ivy, English *(Hedera helix)*	Bulgaria thorndale		x x
jasmine, Asiatic *(Trachelospermum asiaticum)*		x	x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
jasmine, star *(Trachelospermum jasminoides)*			x
juniper (Juniperus *spp.*)	Arcadia		x
	Armstrong		x
	bar harbor		x
	blue chip	x	x
	blue Pacific shore	x	x
	blue point	x	x
	blue rug	x	x
	blue star	x	x
	broadmoor		x
	buffalo		x
	calgary carpet		x
	emerald sea		x
	emerald spreader		x
	endora compacta		x
	fruitlandi		x
	gold coast	x	x
	green		x
	grey owl	x	x
	gold tip		x
	hetzi		x
	hughes		x
	icee blue	x	x
	Manhattan blue		x
	parsonii	x	x
	pfitzeriana		x
	plumosa		x
	Prince of Wales		x
	procumbens dwarf		x
	prostrate Japanese garden	x	x
	San Jose		x
	sargent blue		x
	sargent green		x
	scandia		x
	scopulorum moonglow		x
	scopulorum skyrocket	x	x
	sea of gold	x	x
	spartan		x
	tamariscifolia		x
	tamarix	x	x
	torulosa - Hollywood	x	x
	twisted		x
	weberi		x
	Youngstown		x
	Yukon belle		x
king palm *(Archontophoenix cunninghamiana)*		x	x
lantana *(Lantana sellowiana)*		x	x
laurel, Carolina cherry *(Prunus caroliniana)*	bright n' tight	x	x
laurel, mountain *(Kalmia latifolia)*			x
laurel, Texas mountain (*Sophora secundiflora*)		x	x
leucothoe *(Leucothoe fontanesiana)*			x
ligustrum, Japanese *(Ligustrum japonicum)*			x
lily *(Agapanthus spp.)*	streamline		x
lily, Asiatic (*Lilium asiaticum*)		x	x
lily, Kaffir (*Clivia miniata*)		x	x
Lily of the Nile *(Agapanthus africanus)*	albus		x
	Peter Pan		x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
lilyturf *(Liriope muscari)*	blue moon evergreen giant lilac beauty majestic monroe white silvery sunproof variegata	x x x 	x x x x x x x
lilyturf, creeping *(Liriope spicata)*			x
magnolia *(Magnolia grandiflora)*	D.D. Blanchard	x	x
magnolia, saucer *(Magnolia x soulangeana)*		x	x
mandevilla *(Mandevilla splendens)* *(Mandevilla x amabilis)*	 Red Riding Hood crimson jewel	 x x	 x x
maple, amur *(Acer ginnala)*	emerald elf	x	x
maple, Japanese *(Acer palmatum)*		x	x
maple, Norway *(Acer platanoides)*			x
maple, red† *(Acer rubrum)*	red sunset	x	x
maple, silver *(Acer saccharinum)*			x
maple sugar† *(Acer saccharum)*			x
marguerite, blue *(Felicia amelloides)*		x	x
marigold *(Tagetes patula)*	honeycomb variegata wheeleris dwarf		x x x
metrosideros *(Metrosideros collinus)*	'springfire'	x	x
mock orange† *(Philadelphus spp)*	golden snowflake double white		x x
mondo grass *(Ophiopogon japonicus)*		x	x
moss rose *(Portulaca grandiflora)*	sunnyside		x
mountainash *(Sorbus aucuparia)*			x
myrtle, crape *(Lagerstroemia indica)*	Byer's hardy lavender Byer's white faurei langer muskogee peppermint lace standard pink zuni	x x x x	x x x x x x x x
myrtle, wax *(Myrica californica)*			x
myrtle, willow *(Agonis flexuosa)*			x
narcissus *(Narcissus spp.)*			x
New Zealand flax *(Phormium sp.)* *(Phormium tenax)*	 rainbow chief rainbow queen Jack Spratt	 x x x	 x x x
oak, laurel *(Quercus laurifolia)*		x	x
oak, pin *(Quercus palustris)*			x
oak, red *(Quercus rubra)*			x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
oak, shumard *(Quercus shumardii)*		x	x
oak, southern *(Quercus virginiana)*			x
oak, willow *(Quercus phellos)*		x	x
oleander *(Nerium oleander)*	hardy red Mrs. Roeding petite pink sister agnes	x	x x x x
oleaster hedge *(Elaeagnus X ebbengi)*		x	x
orange, jessamine† *(Murraya paniculata)*		x	x
osmanthus *(Osmanthus fragens)*		x	x
osmanthus, holly leaf *(Osmanthus heterophyllus)*	goshiki	x	x
osteospermum *(Osteospermum fruticosum)*	whirligig		x
pachysandra *(Pachysandra terminalis)*			x
palm, bangalow *(Archontophoenix cuninghamiana)*			x
palm, bismark *(Bismarckia nobilis)*			x
palm, California fan *(Washingtonia filifera)*		x	x
palm, cardboard *(Zamia furfuracea)*		x	x
palm, majesty *(Ravenea rivularis)*		x	x
palm, paurotis *(Acoelorraphe wrightii)*		x	x
palm, pindo 'blue' *(Butia capitata)*		x	x
palm, queen *(Syagrus romanzoffianum)*		x	x
pampas grass *(Cortaderia selloana)*	ivory feathers	x	x x
pansy *(Viola x wittrockiana)*			x
paper flower *(Bougainvillea glabra)*	Barbara Karst	x	x
peach† *(Prunus persica)*			x
pepper tree, California *(Schinus molle)*		x	x
periwinkle, dwarf *(Vinca minor)*			x
petunia *(Petunia x hybrida)*	picoti	x	x
philodendron, tree *(Philodendron selloum)*		x	x
photinia, red tip *(Photinia x fraseri)*			x
pieris *(Pieris taiwanensis)*			x
pieris, Japanese *(Pieris japonica)*	mountain fire	x	x
pine, Afghan *(Pinus eldarica)*		x	x
pine, aleppo *(Pinus halapensis)*		x	x
pine, Austrian black *(Pinus nigra)*		x	x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
pine, Canary Island *(Pinus canariensis)*		x	x
pine, Japanese black *(Pinus thunbergiia)*		x	x
pine, loblolly *(Pinus taeda)*		x	x
pine, longleaf *(Pinus palustris)*			x
pine, mugo or Swiss Mt. *(Pinus mugo)*			x
pine, Scotch *(Pinus sylvestris)*			x
pine, slash *(Pinus elliottii)*			x
pine, Virginia *(Pinus virginiana)*			x
pine, white *(Pinus strobus)*		x	x
pineapple, guava† *(Feijoa sellowiana)*			x
pittosporum, *(Pittosporum tobira)*	golf ball shimi crème de menthe Wheeler's dwarf	x x x	x x x
plum, purple† *(Prunus cistena)*			x
plumbago, cape *(Plumbago auriculata)*	royal cape	x	x
plume grass *(Erianthus ravennae)*		x	x
Podocarpus (*Podocarpus henkelii)*	yellowood	x	x
potentilla *(Potentilla fruticosa)* *(Potentilla nepalensis)*	abbotswood		x x
privet *(Ligustrum x vicaryii)* *(Ligustrum japonicum)*	golden vicary regal texanum yellow tipped	 x 	x x x x
privet, glossy *(Ligustrum lucidum)*		x	x
pyracantha or firethorn *(Pyricantha x 'Gnome')* *(Pyricantha coccinea)* *(Pyracantha koidzumii)*	gnome lalandei victory	 x	x x x
queen palm *(Arecastrum rammanzoffianum)*			x
quince, Japanese† *(Chaenomeles japonica)*			x
red hot poker *(Kniphofia uvaria)*	flamenco	x	x
redbud, eastern *(Cercis canadensis)*			x
redwood, coast *(Sequoia sempervirens)*		x	x
rhododendron *(Rhododendron spp)*	album Cunningham white PJM purple gem silvery pink		x x x x x
rhododendron, Carolina *(Rhododendron carolinianum)*			x
rhododendron, catawba *(Rhododendron catawbiense)*			x
rhododendron, rhodie max – rosebay *(Rhododendron maximum)*			x
ribbon grass *(Phalaris arundinacea)*			x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
rockcress *(Arabis caucaisca)*	snowcap		x
rose† *(Rosa banksiae)*	luta		x
rose, groundcover (Rosa x Noare) (Rosa x Noaschnee) (Rosa x Noatrum)	 flower carpet red flower carpet white flower carpet pink	 x x x	 x x x
rose, knockout shrub *(Rosa* spp. hybrid)	knockout	x	x
rose, rock (*Cistus purpureus*)	'brilliancy'	x	x
rosemary† *(Rosmarinus officinalis)*			x
rosemary, bog *(Andromeda polifolia)*	nana		x
salvia *(Salvia farinacea)*	rhea		x
sedge, leather leaf *(Carex buchananii)*		x	x
sedum *(S. spurium)*	dragon blood red red carpet yellow		x x x
senecio *(Senecio kleinia)*		x	x
silk tree *(Albizia julibrissin)*		x	x
smoketree (*Cotinus coggyria obovatus*)	Grace	x	x
smoketree, royal purple *(Cotinus coggygria)*	royal purple		x
snapdragon *(Antirrhinum* spp.)			x
snow-in-summer *(Cerastium tomentosum)*		x	x
snowball, common *(Viburmum opulus)*	sterile	x	x
sourwood *(Oxydendrum arboreum)*			x
spiraea *(Astilbe X arendsii)*	fanall		x
spiraea *(Spiraea X vanhouttei)*	bridal wreath spiraea	x	x
spiraea *(Spiraea* spp.)	Anthony Waterer red dolchica froebeli pink goldenflame red snowmound white		x x x x x
spiraea, garland *(Spiraea X arguta)*			x
spruce, Black Hills *(Picea glauca var densata)*			x
spruce, Colorado blue *(Picea pungens)*	glauca	x	x
spruce, dwarf Alberta *(Picea glauca v. albertiana)*	conica	x	x
spruce, Norway *(Picea abies)*			x
spruce, white *(Picea glauca)*	conica		x
spurge, Japanese *(Pachysandra terminalis)*	green sheen	x	x
sweet bay *(Laurus nobilis)*			x

Tolerant Ornamentals (Cont.)

When applied as directed under the conditions described on this label, ornamentals listed below have shown tolerance when grown in container, field, and landscape settings.

		Acceptable Application Method Noted by a (X)	
Name	**Tolerant Cultivars**	**Over the Top**	**Directed**
sweetflag *(Acorus calamus)* *(A. gramineus)*	 ogon	 x	x x x
sweetgum *(Liquidambar styraciflua)*			x
sweet olive† *(Osmanthus fragrans)*			x
sycamore *(Platanus occidentalis)* *(P.l racemosa)*	 American California	 x	 x x
tea tree, New Zealand *(Leptospermum scoparium)*	ruby glow martini	x x	x x
tree fern (tiki fern) *(Asparagus virgatus)*			x
trumpet flower or Carolina Jessamine *(Gelsemium sempervirens)*			x
tulip *(Tulip spp)*	apeldoorn		x
tufted hairgrass *(Deschampsia caespitosa)*			x
verbena, shrub *(Lantana sellowiana)*			x
Verbena, St. Paul's *(Verbena peruviana.)*	St. Paul		x
viburnum *(Viburnum* spp.)	American cranberry bush arrowood European cranberry bush linden Mohican wright		x x x x x x
vinca (periwinkle) *(Vinca minor)*			x
weigela *(Weigela florida)*	java red	x	x
windmill palm *(Trachycarpus fortunei)*			x
wisteria, Japanese *(Wisteria floribunda)*	Texas purple	x	x
xylosma *(Xylosma congestum)*			x
yarrow *(Achillea* spp.)			x
yaupon *(Ilex vomitoria)*	dwarf		x
yellow bells *(Tecoma stans)*		x	x
yesterday-today-and-tomorrow *(Brunfelsia pauciflora)*	floribunda	x	x
yew *(Taxus cuspidata)* *(Taxus x media)*	 capitata denisiformis	 x	 x x
yucaa, red *(Hesperaloe parvifolia)*		x	x

† Ornamental species only. Do not use on plants grown for food or feed.

Terms and Conditions of Use

If terms of the following Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies are not acceptable, return unopened package at once to the seller for a full refund of purchase price paid. To the extent permitted by law, use by the buyer or any other user constitutes acceptance of the terms under Warranty Disclaimer, Inherent Risks of Use and Limitations of Remedies.

Warranty Disclaimer

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. To the extent permitted by law, SELLER MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

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It is impossible to eliminate all risks associated with use of this product. Plant injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Seller. To the extent permitted by law, all such risks shall be assumed by buyer.

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1. Refund of purchase price paid by buyer or user for product bought, or
2. Replacement of amount of product used

To the extent permitted by law, seller shall not be liable for losses or damages resulting from handling or use of this product unless Seller is promptly notified of such loss or damage in writing. To the extent permitted by law, in no case shall Seller be liable for consequential or incidental damages or losses.

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Produced for
Corteva Agriscience LLC
9330 Zionsville Road
Indianapolis, IN 46268

Label Code: CD02-337-021
Replaced Label: CD02-337-020

EPA accepted 7/02/21

Revisions:

1. Updated the language regarding Resistance Management per PR Notices 2017-1 and 2017-2.
2. Update MOA table
3. Add Environmental Hazards:
    a. Non-Target Organism Advisory: This product is toxic to plants and may adversely...Drift Management Section of this label."
    b. Groundwater Advisory: "This chemical has properties...water table is shallow."
    c. Surface Water Advisory: "This product may impact surface... runoff for several weeks after application."
4. Update the refer to statement on base label to read, "Refer to inside of label booklet for additional information including Directions for Use."
5. Related to change of company name, address, and contact information for company 62719 accepted by EPA January 5, 2021 updated Trademark statement: Updated to " ™®Trademarks of Corteva Agriscience and its affiliated companies and the following
    a. Updated company name to "Corteva Agriscience LLC
    b. Terms and Conditions for Use: Updated
    c. Warranty Disclaimer: Updated
    d. Inherent Risks of Use: Updated
    e. Limitation of Remedies: Updated
6. Add Mandatory Spray Drift Management section
7. Add Spray Drift Advisories section.