

## BARRICADE® 4FL Herbicide

Date: 10/17/2014  
Replaces: 9/18/2014

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **BARRICADE® 4FL Herbicide**

Product No.: A12333D

Use: Herbicide

Manufacturer: Syngenta Crop Protection, LLC  
Post Office Box 18300  
Greensboro NC 27419

Manufacturer Phone: 1-800-334-9481

**Emergency Phone: 1-800-888-8372**

### 2. HAZARDS IDENTIFICATION

Classifications: Skin Sensitizer: Category 1B  
Carcinogenicity: Category 2  
Specific Target Organ Toxicity: Repeated Category 2  
Specific Target Organ Toxicity: Drowsiness Category 3  
Eye Damage/Irritation: Category 2B

Signal Word (OSHA): Warning

Hazard Statements: May cause an allergic skin reaction  
Causes eye irritation  
May cause drowsiness or dizziness  
Suspected of causing cancer  
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Use only outdoors or in a well-ventilated area.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
Call a poison center, doctor or Syngenta if you feel unwell.  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Do not breathe mist, vapors, spray.  
Wash hands and face thoroughly after handling.  
Contaminated work clothing must not be allowed out of the workplace.  
Wear protective gloves, protective clothing, eye protection.  
If on skin: Wash with plenty of soap and water.

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If skin irritation or rash occurs: Get medical advice.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice.  
If exposed or concerned: Get medical advice/attention.  
See Section 4 First Aid Measures.  
Wash contaminated clothing before reuse.  
Store locked up.  
Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Common Name	CAS Number	Concentration
1,2-Propanediol	Propylene Glycol	57-55-6	Trade Secret
Attapulgite Clay	Attapulgite Clay	12174-11-7	Trade Secret
Other ingredients	Other ingredients	Trade Secret	59.3%
N3, N3-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine	Prodiamine	29091-21-2	40.7%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

### 4. FIRST AID MEASURES

Have the product container, label or Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

**Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

**Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

**Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

**Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Most important symptoms/effects:

Eye irritation  
Allergic skin reaction  
Drowsiness or dizziness

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Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

### 5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters:

Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.

### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

### 7. HANDLING AND STORAGE

Precautions for safe handling:

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Conditions for safe storage, including any incompatibilities:

Store locked up.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.**

**FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.**

Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Propylene Glycol	Not Established	Not Established	10 mg/m <sup>3</sup> TWA	AIHA
Attapulgitte Clay	Not Established	Not Established	Not Established	Not Applicable

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Other ingredients	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Prodiamine	Not Established	Not Established	10 mg/m <sup>3</sup> TWA	Syngenta

Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

Individual protection measures:

**Ingestion:**

Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

**Eye Contact:**

Where eye contact is likely, use chemical splash goggles.

**Skin Contact:**

Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

**Inhalation:**

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH certified respirator with any N, R, P or HE filter.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow liquid

Odor: Weak odor of ammonia

Odor Threshold: Not Available

pH: 8 - 10 (1% suspension in water)

Melting point/freezing point: Not Applicable

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): > 212°F

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Prodiamine <5.6 x 10<sup>-6</sup> mmHg @ 68°F (20°C)

Vapor Density: Not Available

Relative Density: 1.17 g/cm<sup>3</sup> @ 68°F ; 9.76 lb/gal @ 68°F

Solubility (ies): Prodiamine 0.013 ppm @ 77°F (25°C)

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: Not Available

Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

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**10. STABILITY AND REACTIVITY**

Reactivity: Not reactive.  
 Chemical stability: Stable under normal use and storage conditions.  
 Possibility of hazardous reactions: Will not occur.  
 Conditions to Avoid: Thermal, mechanical and electrical ignition sources.  
 Incompatible materials: None known.  
 Hazardous Decomposition Products: None known.

**11. TOXICOLOGICAL INFORMATION**

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation, Drowsiness or dizziness

Delayed, immediate and chronic effects of exposure: Possible carcinogenicity, Eye irritation, Allergic skin reaction, Drowsiness or dizziness

Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Rat) :	> 5000 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.55 mg/l air - 4 hours
Eye Contact:	Minimally Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Sensitizing (Guinea Pig)	

Reproductive/Developmental Effects

Prodiamine: Fetal toxicity at high dose levels (rats); developmental and maternal toxicity observed at 1g/kg/day.

Chronic/Subchronic Toxicity Studies

Prodiamine: Liver (alteration and enlargement) and thyroid effects (hormone imbalances) at high dose levels (rats); decreased body weight gains.

Carcinogenicity

Prodiamine: Possible human carcinogen based on limited animal evidence in the absence of human data.

Chemical Name	NTP/IARC/OSHA Carcinogen
1,2-Propanediol	No
Attapulgite Clay	IARC 2B
Other ingredients	No
N3, N3-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine	No

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Other Toxicity Information

None

Toxicity of Other Components

Attapulgite Clay

Prolonged or repeated inhalation of dust may cause a disabling, progressive pulmonary fibrosis. Inhalation hazard may not exist in the liquid form. May cause eye irritation.

Other ingredients

Not Applicable

Propylene Glycol

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also, eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Target Organs

Active Ingredients

Prodiamine: Liver, thyroid

Inert Ingredients

Attapulgite Clay: Lung, eye

Other ingredients: Not Applicable

Propylene Glycol: CNS, kidney, liver

**12. ECOLOGICAL INFORMATION**

Eco-Acute Toxicity

Prodiamine:

Fish (Bluegill Sunfish) 96-hour LC50 > 552 ppb

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 83 ppb

Bird (Bobwhite Quail) 14-day LD50 > 2250 mg/kg

Environmental Fate

Prodiamine:

The information presented here is for the active ingredient, prodiamine.

Does not bioaccumulate. Persistent in soil. Stable in water. Immobile in soil. Sinks in water (after 24 h).

**13. DISPOSAL CONSIDERATIONS**

Disposal:

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

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### 14. TRANSPORT INFORMATION

#### DOT Classification

Ground Transport - NAFTA  
Not regulated

#### Comments

Water Transport - International  
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Prodiamine), Marine Pollutant  
Hazard Class: Class 9  
Identification Number: UN 3082  
Packing Group: PG III

#### Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Prodiamine)  
Hazard Class: Class 9  
Identification Number: UN 3082  
Packing Group: PG III

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### 15. REGULATORY INFORMATION

#### Pesticide Registration:

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:

Caution: May be harmful if swallowed, absorbed through skin, or inhaled. Avoid breathing vapor. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

#### EPA Registration Number(s):

100-1139

#### EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard  
Chronic Health Hazard

Section 313 Toxic Chemicals: None

#### CERCLA/SARA 304 Reportable Quantity (RQ):

None

#### RCRA Hazardous Waste Classification (40 CFR 261):

Not Applicable

#### TSCA Status:

Exempt from TSCA, subject to FIFRA

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### 16. OTHER INFORMATION

#### NFPA Hazard Ratings

Health: 2  
Flammability: 1  
Instability: 0

#### HMIS Hazard Ratings

Health: 2  
Flammability: 1  
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: C,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/1/2001

Revision Date: 10/17/2014

Replaces: 9/18/2014

Section(s) Revised: 11

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.



# SAFETY DATA SHEET

## DOW AGROSCIENCES LLC

**Product name:** DIMENSION™ 2EW Herbicide

**Issue Date:** 06/30/2015

**Print Date:** 06/30/2015

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

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## 1. IDENTIFICATION

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**Product name:** DIMENSION™ 2EW Herbicide

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

**Identified uses:** End use herbicide product

### COMPANY IDENTIFICATION

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

**Customer Information Number:**

800-992-5994

[info@dow.com](mailto:info@dow.com)

### EMERGENCY TELEPHONE NUMBER

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

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

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## 2. HAZARDS IDENTIFICATION

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### Hazard classification

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

Skin irritation - Category 2

Skin sensitisation - Sub-category 1B

Reproductive toxicity - Category 2

### Label elements

#### Hazard pictograms



Signal word: **WARNING!**

**Hazards**

Causes skin irritation.

May cause an allergic skin reaction.

Suspected of damaging fertility or the unborn child.

**Precautionary statements****Prevention**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Wash skin thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves.

Use personal protective equipment as required.

**Response**

IF ON SKIN: Wash with plenty of soap and water.

IF exposed or concerned: Get medical advice/ attention.

If skin irritation or rash occurs: Get medical advice/ attention.

Take off contaminated clothing and wash before reuse.

**Storage**

Store locked up.

**Disposal**

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

**Other hazards**

no data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Dithiopyr	97886-45-8	24.0%
Cyclohexanone	108-94-1	13.0%
2-Ethylhexanol	104-76-7	1.9%
Toluene	108-88-3	0.1%
Balance	Not available	61.0%

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## 4. FIRST AID MEASURES

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### Description of first aid measures

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

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

**Skin contact:** Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.

**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:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

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

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

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

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## 5. FIREFIGHTING MEASURES

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**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.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Keep upwind of spill. Ventilate area of leak or spill.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

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

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Keep out of reach of children. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

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

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Dithiopyr	Dow IHG	TWA	0.25 mg/m <sup>3</sup>
Cyclohexanone	ACGIH	TWA	20 ppm
	ACGIH	STEL	50 ppm
Toluene	OSHA Z-1	TWA	200 mg/m <sup>3</sup> 50 ppm
	ACGIH	TWA	OEL Notation
	ACGIH	STEL	Absorbed via skin
	ACGIH	TWA	20 ppm
	OSHA Z-1		
	ACGIH	TWA	BEI
	OSHA Z-2	TWA	200 ppm
	OSHA Z-2	CEIL	300 ppm
	OSHA Z-2	Peak	500 ppm

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

### Exposure controls

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

### Individual protection measures

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

#### Skin protection

**Hand protection:** Use gloves, chemically resistant to this material, at all times.

Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Viton. Butyl rubber. Neoprene. Chlorinated polyethylene. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR").  
 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. 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.

**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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

Physical state	Liquid.
Color	Tan
Odor	Mild
Odor Threshold	no data available
pH	4.57 1% pH Electrode (1% aqueous suspension)
Melting point/range	Not applicable
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	<b>closed cup</b> > 100 °C (> 212 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapor Pressure	No test data available
Relative Vapor Density (air = 1)	No test data available
Relative Density (water = 1)	1.001 at 20 °C (68 °F) <i>Digital Density Meter (Oscillating Coil)</i>
Water solubility	emulsifiable
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Dynamic Viscosity	34.3 mPa.s at 20 °C (68 °F)
Kinematic Viscosity	No test data available
Explosive properties	no data available
Oxidizing properties	no data available
Liquid Density	1 g/cm <sup>3</sup> at 20 °C (68 °F) <i>Digital density meter</i>
Molecular weight	no data available

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

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**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.

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## **11. TOXICOLOGICAL INFORMATION**

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

### **Acute toxicity**

#### **Acute oral toxicity**

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, > 5,000 mg/kg

#### **Acute dermal toxicity**

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

As product:

LD50, Rabbit, > 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.

As product:

LC50, Rat, male and female, 4 Hour, Other, > 5.41 mg/l

### **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**

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:

Liver.

Kidney.

Blood.

Thyroid.

Adrenal gland.

Gall bladder.

For the minor component(s):

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

Kidney.

Liver.

Spleen.

Blood.

Central nervous system.

Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

**Carcinogenicity**

Active ingredient 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.

Excessive ingestion of 2-ethylhexanol caused birth defects in laboratory animals only at doses toxic to the mother. Occupational exposure to 2-ethylhexanol by the inhalation or dermal routes poses no significant threat to the offspring. In laboratory animals, toluene has been toxic to the fetus at doses toxic to the mother; it has caused birth defects in mice when administered orally, but not by inhalation. Contains component(s) which, in laboratory animals, have been toxic to the fetus only at doses toxic to the mother. Contains component(s) which did not cause birth defects in laboratory animals. The component(s) is/are: Cyclohexanone.

**Reproductive toxicity**

In animal studies, active ingredient 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.

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## 12. ECOLOGICAL INFORMATION

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

### Toxicity

#### Acute toxicity to fish

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

LC50, *Cyprinus carpio* (Carp), semi-static test, 96 Hour, 3.0 mg/l, OECD Test Guideline 203

#### Acute toxicity to aquatic invertebrates

EC50, *Daphnia magna* (Water flea), semi-static test, 48 Hour, 4.9 mg/l, OECD Test Guideline 202

#### Acute toxicity to algae/aquatic plants

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

**Theoretical Oxygen Demand:** 2.61 mg/mg

#### Photodegradation

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

**Sensitizer:** OH radicals

**Atmospheric half-life:** 10.6 Hour

**Method:** Estimated.

#### 2-Ethylhexanol

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Pass

**Biodegradation:** 68 %  
**Exposure time:** 17 d  
**Method:** OECD Test Guideline 301B or Equivalent  
 10-day Window: Not applicable  
**Biodegradation:** > 95 %  
**Exposure time:** 5 d  
**Method:** OECD Test Guideline 302B or Equivalent

**Theoretical Oxygen Demand:** 2.95 mg/mg

**Chemical Oxygen Demand:** 2.70 mg/mg

**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	26 - 70 %
10 d	75 - 81 %
20 d	86 - 87 %

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)  
**Sensitizer:** OH radicals  
**Atmospheric half-life:** 9.7 Hour  
**Method:** Estimated.

**Toluene**

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

**Theoretical Oxygen Demand:** 3.13 mg/mg Calculated.

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)  
**Sensitizer:** OH radicals  
**Atmospheric half-life:** 2 d  
**Method:** Estimated.

**Balance**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Bioaccumulation:** No data available.

**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.

**2-Ethylhexanol**

Potential for mobility in soil is low (Koc between 500 and 2000).

**Partition coefficient(Koc):** 800 Estimated.

**Toluene**

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient(Koc):** 37 - 178 Estimated.

**Balance**

No relevant data found.

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## 13. DISPOSAL CONSIDERATIONS

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

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## 14. TRANSPORT INFORMATION

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**DOT**

<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.(Dithiopyr, cyclohexanone)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III
<b>Reportable Quantity</b>	cyclohexanone

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

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

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

<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.(Dithiopyr)
<b>UN number</b>	UN 3082
<b>Class</b>	9
<b>Packing group</b>	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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**15. REGULATORY INFORMATION**

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**OSHA Hazard Communication Standard**

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

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

Acute Health Hazard  
Chronic Health Hazard

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

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

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

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

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

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

<b>Components</b>	<b>CASRN</b>
Cyclohexanone	108-94-1
2-Ethylhexanol	104-76-7
Toluene	108-88-3

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

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

**United States TSCA Inventory (TSCA)**

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

**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 62719-542

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.

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**16. OTHER INFORMATION**


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**Hazard Rating System****NFPA**

Health	Fire	Reactivity
2	1	0

**Revision**

Identification Number: 101213347 / A211 / Issue Date: 06/30/2015 / Version: 5.1

DAS Code: GF-1396

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

**Legend**

Absorbed via skin	Absorbed via skin
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
BEI	Biological Exposure Indices
CEIL	Acceptable ceiling concentration
Dow IHG	Dow Industrial Hygiene Guideline
OEL Notation	Absorbed via Skin*
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-2	USA. Occupational Exposure Limits (OSHA) - Table Z-2
Peak	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

**Information Source and References**

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

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

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Product Name:** TRUPOWER® 3 Selective Herbicide**EPA Reg. No.:** 228-551**Product Type:** Herbicide**Company Name:** Nufarm Americas Inc.  
11901 S. Austin Avenue  
Alsip, IL 60803  
1-800-345-3330**Telephone Numbers:** For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,  
Call CHEMTREC Day or Night: 1-800-424-9300  
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

**2. HAZARDS IDENTIFICATION****PHYSICAL HAZARDS:**

Not Hazardous

**HEALTH HAZARDS:**Serious eye damage/eye irritation Category 1  
Acute toxicity, oral Category 4**ENVIRONMENTAL HAZARDS:**Hazardous to aquatic environment, acute Category 2  
Hazardous to aquatic environment, chronic Category 3**SIGNAL WORD:**

DANGER

**HAZARD STATEMENTS:**

Causes serious eye damage. Harmful if swallowed. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

**PRECAUTIONARY STATEMENTS**

Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection and protective gloves. Avoid release to the environment.

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Dispose of contents in accordance with local, state, and federal regulations.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Triisopropanolamine Salt of 2,4-Dichlorophenoxyacetic Acid (2,4-D TIPA Salt)	32341-80-3	46.3 – 49.2
Dimethylamine Salt of (+)-R-2-(2-Methyl-4-Chlorophenoxy) propionic acid (MCP-PP-p DMA Salt)	66423-09-4	7.4 – 8.1
3,6-Dichloro-o-anisic acid (Dicamba Acid)	1918-00-9	3.0 – 3.4
Other Ingredients	Trade Secret	Trade Secret

**Synonyms:** Mixture of 2,4-D TIPA Salt, Mecoprop-p (MCP-PP-p) DMA Salt, and Dicamba Acid

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

## 4. FIRST AID MEASURES

**If in Eyes:** Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get immediate medical attention.

**If Swallowed:** Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. If symptoms develop, get medical attention.

**If on Skin or Clothing:** Take off contaminated clothing. Wash thoroughly with soap and water. If irritation occurs, get medical advice.

**If Inhaled:** Move person to fresh air. If symptoms develop, get medical attention.

**Most important symptoms/effects, acute and delayed:** Eye exposure may cause serious, irreversible damage. Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

**Indication of Immediate medical attention and special treatment if needed:** Seek immediate medical attention for eye exposure. For ingestion there is no specific antidote available. Treat symptomatically.

**Note to Physician:** Probable mucosal damage may contraindicate the use of gastric lavage

## 5. FIRE FIGHTING MEASURES

**Extinguishing Media:** Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

**Special Fire Fighting Procedures:** Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

**Unusual Fire and Explosion Hazards:** If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

**Hazardous Decomposition Materials (Under Fire Conditions):** May produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**Environmental Precautions:** Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

**Methods for Containment:** Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

**Methods for Cleanup and Disposal:** Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

**Other Information:** Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.



## 7. HANDLING AND STORAGE

**HANDLING:**

Do not get in eyes. Avoid contact with skin or clothing. Avoid breathing vapors or mists. Users should wash hands, face, and arms with soap and water before eating, smoking, drinking or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water. 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.

**STORAGE:**

Always use original container to store pesticides in a secured warehouse or storage building. Store at temperatures above 32° F. If allowed to freeze, remix before using. This does not alter the product. Containers should be opened in well-ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed or other pesticides. Do not contaminate water, food or feed by storage or disposal.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:**

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

**Personal Protective Equipment:**

**Eye/Face Protection:** To avoid contact with eyes, wear face shield and goggles or goggles. An emergency eyewash or water supply should be readily accessible to the work area.

**Skin Protection:** To avoid contact with skin, wear long pants, long-sleeved shirt, shoes plus socks, and chemical-resistant gloves. Washing facilities should be readily accessible to the work area.

**Respiratory Protection:** Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

**General Hygiene Considerations:** Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

**Exposure Guidelines:**

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
2,4-D TIPA Salt	10*	NE	10* (inhalable, skin)	NE	mg/m <sup>3</sup>
MCPP-p DMA Salt	NE	NE	NE	NE	
Dicamba Acid	NE	NE	NE	NE	
Other Ingredients	NE	NE	NE	NE	

\*Based on adopted limit for 2,4-D Acid

NE = Not Established

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Transparent dark amber liquid
<b>Odor:</b>	Slight amine odor
<b>Odor threshold:</b>	No data available
<b>pH:</b>	6.51 (1% w/w dispersion in DIW)
<b>Melting point/freezing point:</b>	No data available
<b>Initial boiling point and boiling range</b>	No data available
<b>Flash point:</b>	Not applicable due to aqueous formulation
<b>Evaporation rate:</b>	No data available
<b>Flammability (solid, gas):</b>	No data available
<b>Upper/lower flammability or explosive limits:</b>	No data available
<b>Vapor pressure:</b>	No data available
<b>Vapor density:</b>	No data available

## SAFETY DATA SHEET

## TRUPOWER® 3 Selective Herbicide

<b>Relative density:</b>	1.176 g/ml @ 20° C
<b>Solubility(ies):</b>	Soluble
<b>Partition coefficient: n-octanol/water:</b>	No data available
<b>Autoignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Viscosity:</b>	39.609 cSt @20° C; 14.114 cSt @ 40° C

**Note:** Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

### 10. STABILITY AND REACTIVITY

**Reactivity:** Not reactive.

**Chemical Stability:** This material is stable under normal handling and storage conditions.

**Possibility of Hazardous Reactions;** Hazardous polymerization will not occur.

**Conditions to Avoid:** Excessive heat. Do not store near heat or flame.

**Incompatible Materials:** Strong oxidizing agents: bases and acids.

**Hazardous Decomposition Products:** Under fire conditions may produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

### 11. TOXICOLOGICAL INFORMATION

**Likely Routes of Exposure:** Eye contact, Skin contact

**Symptoms of Exposure:**

**Eye Contact:** Causes irreversible eye damage. Vapors and mist can cause irritation.

**Skin Contact:** Minimally toxic and slightly irritating based on toxicity studies. Overexposure by skin absorption may cause symptoms similar to those for ingestion.

**Ingestion:** Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

**Inhalation:** Low inhalation toxicity.

**Delayed, immediate and chronic effects of exposure:** None reported.

**Toxicological Data:**

Data from laboratory studies on this product are summarized below:

**Oral:** Rat LD<sub>50</sub>: 790 mg/kg

**Dermal:** Rat LD<sub>50</sub>: >5,000 mg/kg

**Inhalation:** Rat 4-hr LC<sub>50</sub>: >2.01 mg/L (no mortality at highest dose tested)

**Eye Irritation:** Rabbit: Severely irritating/corrosive (MMTS=39.0)

**Skin Irritation:** Rabbit: Slightly irritating (PDII=1.1)

**Skin Sensitization:** Not a contact sensitizer in guinea pigs following repeated skin exposure.

**Subchronic (Target Organ) Effects:** Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods. Repeated overexposure to dicamba may cause liver changes or a decrease in body weight.

**Carcinogenicity / Chronic Health Effects:** Prolonged overexposure to phenoxy herbicides can cause liver, kidney and muscle damage. The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-D lifetime feeding studies in rats and mice, as well as an MCPP lifetime feeding study in rats, did not show carcinogenic potential. Dicamba did not cause cancer in long-term animals studies. The U.S. EPA has given 2,4-D and dicamba a Class D classification (not classifiable as to human carcinogenicity).

**Reproductive Toxicity:** No impairment of reproductive function attributable to 2,4-D or MCPP have been noted in laboratory animal studies. Animal tests with dicamba have not demonstrated reproductive effects.

**Developmental Toxicity:** Studies in laboratory animals with 2,4-D and MCPP have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. Animal tests with dicamba have not demonstrated developmental effects.

**Genotoxicity:** There have been some positive and some negative studies, but the weight of evidence is that neither 2,4-D nor MCPP is mutagenic. Animal tests with dicamba have not demonstrated mutagenic effects.

**Assessment Carcinogenicity:**

## SAFETY DATA SHEET

## TRUPOWER® 3 Selective Herbicide

This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Chlorophenoxy Herbicides (2,4-D TIPA Salt, MCP-p DMA Salt)	No	2B	No	No
Dicamba	No	No	No	No
Other Ingredients	No	No	No	No

### 12. ECOLOGICAL INFORMATION

#### Ecotoxicity:

##### Data on TIPA Salt of 2,4-D Acid:

Bluegill Acute LC <sub>50</sub> :	432 mg/l	Pink Shrimp Acute LC <sub>50</sub> :	744 mg/l
Rainbow Trout Acute LC <sub>50</sub> :	317 mg/l	Tidewater Silverside Acute LC <sub>50</sub> :	376 mg/l
Daphnia Acute LC <sub>50</sub> :	748 mg/l	Growth Inhibition EC <sub>50</sub> Green Algae:	103 mg/l

##### Data on Mecoprop-p:

96-hour LC <sub>50</sub> Bluegill:	>93 mg/l	Bobwhite Quail Oral LD <sub>50</sub> :	>498 mg/kg
96-hour LC <sub>50</sub> Rainbow Trout:	>150 mg/l	Bobwhite Quail 8-day Dietary LC <sub>50</sub> :	>4,633 mg/kg
48-hour LC <sub>50</sub> Daphnia:	>91 mg/l	Mallard Duck 8-day Dietary LC <sub>50</sub> :	>4,137 mg/kg
72-hour LC <sub>50</sub> Algae:	16.2 mg/L		

##### Data on Dicamba:

96-hour LC <sub>50</sub> Bluegill:	135 mg/l	Bobwhite Quail 8-day Dietary LC <sub>50</sub> :	>10,000 ppm
96-hour LC <sub>50</sub> Rainbow Trout:	135 mg/l	Mallard Duck 8-day Dietary LC <sub>50</sub> :	>10,000 ppm
48-hour EC <sub>50</sub> Daphnia:	110 mg/l	48-hour Honey Bee Contact LD <sub>50</sub> :	>100 µg/bee

#### Environmental Fate:

In laboratory and field studies, TIPA salt of 2,4-D acid salt rapidly dissociated to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks. Mecoprop-p DMA rapidly dissociates to parent mecoprop-p acid in the environment. In soil, mecoprop-p is relatively immobile in most soils and has a half-life of several days in surface soils. Dicamba has low bioaccumulation potential, is not persistent in soil, is highly mobile in soil and degrades rapidly. Mecoprop-p acid is readily biodegradable in screening studies (81% in 10 days).

### 13. DISPOSAL CONSIDERATIONS

#### Waste Disposal Method:

Pesticide wastes are toxic. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA regional office for guidance.

#### Container Handling and Disposal:

**Nonrefillable Containers 5 Gallons or Less:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple 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. Then offer for recycling if available or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

**Nonrefillable containers larger than 5 gallons:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. If recycling or reconditioning is not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

## SAFETY DATA SHEET

## TRUPOWER® 3 Selective Herbicide

**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.

**Refillable containers larger than 5 gallons:** 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.

### 14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this SDS.

#### DOT:

≤ 21 gallons per complete package

Non Regulated

> 21 but <3125 gallons per complete package

UN 3082 Environmentally hazardous substance, liquid, n.o.s.  
(2,4-D AMINE), 9, III, RQ

≥ 3125 gallons per complete package

UN 3082 Environmentally hazardous substance, liquid, n.o.s.  
(2,4-D AMINE), (DICAMBA), 9, III, RQ

#### IMDG

Non Regulated

#### IATA

Non Regulated

### 15. REGULATORY INFORMATION

#### EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

DANGER. Corrosive, causes irreversible eye damage. Do not get in eyes, or on skin or clothing. Harmful if swallowed.

#### U.S. FEDERAL REGULATIONS

**TSCA Inventory:** This product is exempted from TSCA because it is solely for FIFRA regulated use.

#### SARA Hazard Notification/Reporting:

**Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370.66):**

Acute Health

#### Section 313 Toxic Chemical(s):

Dicamba (CAS No. 1918-00-9), 3.20% by weight in product

#### Reportable Quantity (RQ) under U.S. CERCLA:

# SAFETY DATA SHEET

# TRUPOWER® 3 Selective Herbicide

Dicamba (CAS No. 1918-00-9) 1,000 pounds

### RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

### State Information:

Other state regulations may apply. Check individual state requirements.

**California Proposition 65:** Not Listed.

<b>16. OTHER INFORMATION</b>
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### National Fire Protection Association (NFPA) Hazard Rating:

**Rating for this product: Health: 3 Flammability: 1 Reactivity: 0**

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

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