

## DUAL II MAGNUM® SI HERBICIDE

Date: 8/5/2015  
Replaces: 4/9/2015

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **DUAL II MAGNUM® SI HERBICIDE**

Product No.: A9812A

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: Oral: Category 4  
Skin Sensitizer: Category 1B  
Specific Target Organ Toxicity: Repeated Category 2  
Specific Target Organ Toxicity: Drowsiness Category 3  
Specific Target Organ Toxicity: Respiratory Irritation Category 3  
Aspiration Hazard: Category 1  
Flammable Liquid: Category 4  
Eye Damage/Irritation: Category 2B  
Carcinogenicity: Category 1B

Signal Word (OSHA): Danger

Hazard Statements: Combustible liquid  
Harmful if swallowed  
May be fatal if swallowed and enters airways  
May cause an allergic skin reaction  
Causes eye irritation  
May cause respiratory irritation  
May cause drowsiness or dizziness  
May cause cancer  
May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



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Precautionary Statements: Avoid breathing mist, vapors, spray.  
 Contaminated work clothing must not be allowed out of the workplace.  
 If on skin: Wash with plenty of soap and water.  
 See Section 4 First Aid Measures.  
 If skin irritation or rash occurs: Get medical advice.  
 Wash contaminated clothing before reuse.  
 Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Keep away from heat, sparks, open flames, hot surfaces. No smoking.  
 Do not breathe mist, vapors, spray.  
 Wash hands and face thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Use only outdoors or in a well-ventilated area.  
 Wear protective gloves, protective clothing, eye protection.  
 If swallowed: Call a poison center, doctor or Syngenta if you feel unwell. Rinse mouth.  
 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 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.  
 Call a poison center, doctor or Syngenta if you feel unwell.  
 Do NOT induce vomiting.  
 In case of fire: Use dry chemical, foam or CO2 for extinction.  
 Store in a well-ventilated place. Keep cool.  
 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
Naphthalene	Naphthalene	91-20-3	< 5%
2H-1,4-Benzoxazine, 4-(dichloroacetyl)-3,4-dihydro-3-methyl-	Benoxacor	98730-04-2	<5.0%
Petroleum Solvent	Petroleum Solvent	Trade Secret	Trade Secret
Other ingredients	Other ingredients	Trade Secret	<19.0%
Acetamide, 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)-,(S)	S-Metolachlor	87392-12-9	71.0%

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

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### 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. Do not give any liquid to the person. 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
- Respiratory irritation

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.

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

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### 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:

Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back.

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.

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### 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

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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
Naphthalene	10 ppm TWA	10 ppm TWA (skin)	10 ppm TWA	NIOSH
Benoxacor	Not Established	Not Established	1 mg/m <sup>3</sup> TWA	Syngenta
Petroleum Solvent	Not Established	Not Established	50 mg/m <sup>3</sup> (8 ppm) TWA	Manufacturer
Other ingredients	Not Established	Not Established	Not Established	Not Applicable
S-Metolachlor	Not Established	Not Established	5 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 or Viton), coveralls, socks and chemical-resistant footwear.

Inhalation:

A combination particulate/organic vapor respirator should be used until effective engineering controls are installed to comply with occupational exposure limits, or until exposure limits are established. Use a NIOSH certified respirator with an organic vapor (OV) cartridge or canister with any R, P or HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any

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circumstances where air-purifying respirators may not provide adequate protection.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Deep dark red liquid  
Odor: Aromatic petroleum  
Odor Threshold: Not Available  
pH: 7.0  
Melting point/freezing point: Not Applicable  
Initial boiling point and boiling range: Not Available  
Flash Point (Test Method): 183°F  
Flammable Limits (% in Air): Not Available  
Flammability: Combustible liquid  
Vapor Pressure: S-Metolachlor 2.8 x 10<sup>(-5)</sup> mmHg @ 77°F (25°C)  
Vapor Density: Not Available  
Relative Density: 1.07 g/cc @ 68°F (20°C)  
Solubility (ies): S-Metolachlor 0.48 g/l @ 77°F (25°C)  
Partition coefficient: n-octanol/water: Not Available  
Autoignition Temperature: Not Available  
Decomposition Temperature: Not Available  
Viscosity: Not Available  
Other: None

### 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: None known.  
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, Respiratory irritation

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

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

Ingestion:	Oral (LD50 Rabbit) :	1782 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 2000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 2.6 mg/l air - 4 hours
Eye Contact:	Slightly Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Sensitizing (Guinea Pig)	

### Reproductive/Developmental Effects

S-Metolachlor: Did not show reproductive effects in animal experiments.

### Chronic/Subchronic Toxicity Studies

S-Metolachlor: No adverse effect has been observed in chronic toxicity tests.

### Carcinogenicity

S-Metolachlor: Did not show carcinogenic effects in animal experiments.

Chemical Name	NTP/IARC/OSHA Carcinogen
Naphthalene	See "Toxicity", Sec. 11
2H-1,4-Benzoxazine, 4-(dichloroacetyl)-3,4-dihydro-3-methyl-	No
Petroleum Solvent	No
Other ingredients	No
Acetamide, 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)-, (S)	No

### Other Toxicity Information

None

### Toxicity of Other Components

#### Benoxacor

Results in stomach, liver, and kidney toxicity at high doses. Caused tumors in nonglandular portion of stomach of rodents (histomorphologic region not found in humans). Exposure may cause slight eye irritation. Repeated skin contact may cause a sensitization (allergic) reaction in sensitive individuals.

#### Naphthalene

Exposure to naphthalene can cause cataracts, liver damage, kidney failure, respiratory failure, hematuria, anemia, damage to red blood cells, leukocytosis, or coma.

#### Carcinogen Status:

NTP: Anticipated Carcinogen

IARC: Group 2B Possible Human Carcinogen

#### Other ingredients

Not Established

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**Petroleum Solvent**

Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat and lungs.  
Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination.

**Target Organs****Active Ingredients**

S-Metolachlor: Liver

**Inert Ingredients**

Benoxacor: Gastrointestinal tract, liver, kidney

Naphthalene: Eye, liver, kidney, respiratory tract, blood, CNS

Other ingredients: Not Established

Petroleum Solvent: Respiratory tract, stomach, liver, thyroid, urinary bladder, CNS, skin

**12. ECOLOGICAL INFORMATION****Eco-Acute Toxicity****S-Metolachlor:**

Fish (Rainbow Trout) 96-hour LC50 1.23 mg/l

Green Algae 96-hour ErC50 0.077 mg/l

Invertebrate (Water Flea) 48-hour EC50 11.24 mg/l

**Environmental Fate****S-Metolachlor:**

The information presented here is for the active ingredient, S-Metolachlor.  
Low bioaccumulation potential. Not persistent in soil. Stable in water. 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:** Under certain circumstances, discarded product may exhibit TCLP hazardous characteristics. A hazardous waste determination should be done on a case by case basis.

**Listed Waste:** Contains Naphthalene U165

**14. TRANSPORT INFORMATION****DOT Classification**

Ground Transport - NAFTA

Packages <= 119 gal. Not regulated

Packages > 119 gal.

Proper Shipping Name: Compounds, Weed Killing, Liquid (Trimethylbenzene/Naphthalene)

Hazard Class or Division: Combustible Liquid

Identification Number: NA 1993

Packing Group: PG III

Note: RQ = 500 gal. for Naphthalene (100 lbs.)

Air Transport - NAFTA

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Not regulated in <= 119 gal. packages.  
Prohibited in packages > 119 gal.

### Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Trimethylbenzene/Naphthalene), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

Note: RQ = 500 gal. for Naphthalene (100 lbs.)

IMDG EMS #: F-A, S-F

Air Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Trimethylbenzene/Naphthalene), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

Packing Auth.: 914 Special Provision A97

Note: Max. inner package; Plastic - 5 liters, metal - 10 liters  
Max. single package; 450 liters

## 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: Harmful if swallowed or absorbed through skin. Avoid contact with eyes, skin, or clothing. May cause skin sensitization reactions in some people.

### EPA Registration Number(s):

100-829

### EPCRA SARA Title III Classification:

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

Section 313 Toxic Chemicals: Naphthalene < 5% (CAS No. 91-20-3)

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

Report product spills > 500 gal. (based on naphthalene [RQ = 100 lbs.] content in the formulation)

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

Under certain circumstances, discarded product may exhibit TCLP hazardous characteristics. A hazardous waste determination should be done on a case by case basis.

### TSCA Status:

Exempt from TSCA, subject to FIFRA



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### 16. OTHER INFORMATION

#### NFPA Hazard Ratings

Health: 2  
Flammability: 2  
Instability: 0

#### HMIS Hazard Ratings

Health: 2  
Flammability: 2  
Reactivity: 0

Syngenta Hazard Category: D,S

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

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/10/1996

Revision Date: 8/5/2015

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Section(s) Revised: 2, 4, 11, 16

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.