



# Safety Data Sheet

Issue Date: 14-May-2010

Revision Date: 16-Oct-2015

Version 2

## 1. IDENTIFICATION

### Product Identifier

**Product Name** Phenomenon Duo

### Other means of identification

**SDS #** ADAMA-058A

**Registration Number(s)** EPA Reg. No. 66222-132

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

**Recommended Use** EPA registered pesticide.

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

Makhteshim Agan of North America, Inc. (d/b/a ADAMA)  
3120 Highwoods Blvd., Suite 100  
Raleigh, NC 27604  
1-919-256-9300

### Emergency Telephone Number

**Emergency Telephone (24 hr)** For fire, spill and/or leak contact INFOTRAC:  
1-800-535-5053 (North America) 1-352-323-3500 (International)  
For medical emergencies and health/safety inquiries, contact PROSAR:  
1-877-250-9291

## 2. HAZARDS IDENTIFICATION

This chemical is a product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-EPA registered chemicals. Please see Section 15 for additional EPA information.

**Appearance** Opaque liquid

**Physical State** Liquid

**Odor** Faint paint-like

### Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Specific target organ toxicity (repeated exposure)	Category 2

### Hazards Not Otherwise Classified (HNOC)

May be harmful in contact with skin  
Causes mild skin irritation

### Signal Word

**Warning**

### Hazard Statements

Harmful if inhaled  
May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
 Use only outdoors or in a well-ventilated area  
 Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

Get medical advice/attention if you feel unwell  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Call a poison center or doctor/physician if you feel unwell

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Very toxic to aquatic life with long lasting effects

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Atrazine	1912-24-9	29.1-30.9
Metolachlor II	51218-45-2	28.0-29.8
Proprietary Solvent #1	Proprietary	<5
Proprietary Solvent #2	Proprietary	<5
Proprietary Solvent #3	Proprietary	<2
Proprietary Solvent #4	Proprietary	<1

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### 4. FIRST-AID MEASURES

**First Aid Measures****General Advice**

When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment. If exposed or concerned: Get medical advice/attention.

**Eye Contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison control center or doctor for treatment advice.

**Skin Contact**

IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

**Inhalation**

Give oxygen if breathing is difficult. If breathing has stopped, call 911, give artificial respiration. Call a poison control center or doctor for further treatment advice.

**Ingestion**

Immediately call a poison center or doctor/physician. Do not induce vomiting, unless directed by medical personnel. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects**

**Symptoms** Causes mild skin irritation. May be harmful in contact with skin. May cause an allergic skin reaction. Harmful if swallowed. Harmful if inhaled. Direct contact may cause skin or eye irritation.

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

**Notes to Physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Foam. Dry chemical. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**

None known.

**Hazardous Combustion Products** None known.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate area of unprotected personnel. Remain upwind of fire to avoid hazardous vapors and decomposition products. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Wear protective clothing as described in Section 8 of this safety data sheet. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**Environmental Precautions** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

**Methods and material for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Clean-Up** Absorb with inert material or sweep up, and then place in suitable container for chemical waste.

## 7. HANDLING AND STORAGE

**Precautions for safe handling**

**Advice on Safe Handling** Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Wash face, hands, and any exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Use in accordance with product label instructions. Do not eat, drink, smoke, or apply cosmetics while handling this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Keep container tightly closed and store in a cool, dry and well-ventilated place. Keep out of the reach of children. Keep/store only in original container. Keep away from food, drink and animal feeding stuffs. Store at ambient conditions.
<b>Incompatible Materials</b>	None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Atrazine 1912-24-9	TWA: 5 mg/m <sup>3</sup>	(vacated) TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>
Proprietary Solvent #1	-	TWA: 15 mg/m <sup>3</sup> mist, total particulate TWA: 5 mg/m <sup>3</sup> mist, respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> mist, total particulate (vacated) TWA: 5 mg/m <sup>3</sup> mist, respirable fraction	-
Proprietary Solvent #2	Ceiling: 100 mg/m <sup>3</sup> aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m <sup>3</sup>	-

**Appropriate engineering controls**

<b>Engineering Controls</b>	Please refer to the product label. Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
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**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Wear safety glasses with side shields (or goggles). Goggles are recommended.
<b>Skin and Body Protection</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear long-sleeved shirt, long pants, and shoes plus socks. Use chemical resistant gloves, such as P.V.C., butyl-rubber, nitrile-rubber, or neoprene.
<b>Respiratory Protection</b>	NIOSH-approved respirator or mask in the absence of adequate ventilation.
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Take off all contaminated clothing and wash it before reuse. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Contaminated work clothing should not be allowed out of the workplace.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

<b>Physical State</b>	Liquid	<b>Odor</b>	Faint paint-like
<b>Appearance</b>	Opaque liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Opaque		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5.51 +/- 0.01	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	> 105 °C / > 221 °F	TCC
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Liquid-not applicable	
Upper Flammability Limits	Not applicable	
Lower Flammability Limit	Not applicable	
Vapor Pressure	1.7 mPa @ 20°C (Metolachlor)	
	0.04 mPa @ 20°C (Atrazine)	
Vapor Density	Not determined	
Specific Gravity	1.12 g/ml	@ 20°C (68°F)
Water Solubility	28 mg/L @ 20°C (Atrazine)	
	530 mg/L @ 20°C (Metolachlor)	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical Stability

Stable under recommended storage conditions.

### Possibility of Hazardous Reactions

None under normal processing.

#### **Hazardous Polymerization**

Hazardous polymerization does not occur.

### Conditions to Avoid

Keep out of reach of children.

### Incompatible Materials

None known based on information supplied.

### Hazardous Decomposition Products

None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Product Information

#### Eye Contact

Avoid contact with eyes.

#### Skin Contact

May be harmful in contact with skin. Causes mild skin irritation.

#### Inhalation

Harmful if inhaled.

#### Ingestion

Do not ingest.

**Component Information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Atrazine 1912-24-9	= 672 mg/kg ( Rat )	> 2000 mg/kg ( Rat ) = 7500 mg/kg ( Rabbit )	= 5200 mg/m <sup>3</sup> ( Rat ) 4 h > 5.1 mg/L ( Rat ) 4 h
Metolachlor II 51218-45-2	= 2200 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 1750 mg/m <sup>3</sup> ( Rat ) 4 h
Proprietary Solvent #1	= 12600 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 570 mg/m <sup>3</sup> ( Rat ) 1 h
Proprietary Solvent #2	= 4000 mg/kg ( Rat )	= 9530 µL/kg ( Rabbit )	-
Proprietary Solvent #3	1516 - 2774 mg/kg ( Rat )	-	-
Proprietary Solvent #4	= 1020 mg/kg ( Rat )	-	-

**Information on physical, chemical and toxicological effects****Symptoms**

Please see section 4 of this SDS for symptoms.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Carcinogenicity**

Not classifiable as a human carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Atrazine 1912-24-9		Group 3		

**Legend***IARC (International Agency for Research on Cancer)**Group 3 IARC components are "not classifiable as human carcinogens"***STOT - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

**Product Information (Numerical measures of toxicity)****Acute Oral LD50 (Rat):** >2,500 mg/kg**Acute Dermal LD50 (Rabbit):** >2,000 mg/kg**Acute Inhalation LC50 (Rat):** >2 mg/L (4-hr)**Eye Irritation:** Moderately irritating.**Dermal Irritation:** Moderately irritating.**Dermal Sensitization:** Not a skin sensitizer.**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Very toxic to aquatic life with long lasting effects. Atrazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Atrazine has been found in ground water. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (ground water) is close to the surface and where these soils are very permeable, i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water. Metolachlor is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

**Component Information**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Atrazine 1912-24-9	0.03: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 0.014 - 0.027: 96 h <i>Desmodesmus subspicatus</i> mg/L EC50 semi-static 0.072: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 static 0.13: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 0.2: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 0.004: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 0.0096 - 0.07: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 0.0929: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 semi-static	4.5 - 11: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 3 - 6.75: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 semi-static 3 - 6.75: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 16: 96 h <i>Lepomis macrochirus</i> mg/L LC50 8: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 23.999: 96 h <i>Lepomis macrochirus</i> mg/L LC50 semi-static 19: 96 h <i>Cyprinus carpio</i> mg/L LC50 static 15.7 - 20.2: 96 h <i>Cyprinus carpio</i> mg/L LC50 semi-static 5.4 - 8.4: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 4.1: 96 h <i>Pimephales promelas</i> mg/L LC50 static 4.3: 96 h <i>Poecilia reticulata</i> mg/L LC50 static	EC50 > 86 mg/L 5 min	5.2 - 8.1: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Metolachlor II 51218-45-2	57.1: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 static 0.0448 - 0.0568: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static	8.6 - 12: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 3.3 - 4.6: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 5.4 - 12: 96 h <i>Pimephales promelas</i> mg/L LC50 static 7.4 - 10.5: 96 h <i>Poecilia reticulata</i> mg/L LC50 static		25.1: 48 h <i>Daphnia magna</i> mg/L LC50 4.25: 48 h <i>Daphnia magna</i> mg/L EC50 13 - 18.4: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Proprietary Solvent #1		51 - 57: 96 h <i>Oncorhynchus mykiss</i> mL/L LC50 static		
Proprietary Solvent #2	6500 - 13000: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50	41000: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 14 - 18: 96 h <i>Oncorhynchus mykiss</i> mL/L LC50 static 27540: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 40761: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 40000 - 60000: 96 h <i>Pimephales promelas</i> mg/L LC50 static 16000: 96 h <i>Poecilia reticulata</i> mg/L LC50 static	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	46300: 48 h <i>Daphnia magna</i> mg/L EC50
Proprietary Solvent #3	11.5: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	32 - 37: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 7.5: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 27 - 29.5: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 29.7: 96 h <i>Pimephales promelas</i> mg/L LC50 static 10.0 - 33.0: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static		39: 48 h <i>Daphnia magna</i> mg/L EC50

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

Not determined.

**Mobility**

Chemical Name	Partition Coefficient
Atrazine 1912-24-9	2.59
Metolachlor II 51218-45-2	2.9
Proprietary Solvent #1	-1.76
Proprietary Solvent #2	-1.93
Proprietary Solvent #3	3.1
Proprietary Solvent #4	1.3

**Other Adverse Effects**

Not determined

**13. DISPOSAL CONSIDERATIONS****Waste Treatment Methods****Disposal of Wastes**

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. 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 of the nearest EPA Regional Office for guidance.

**Contaminated Packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

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

Package size less than 119 Gallons: Not regulated

Package size over 119 Gallons:

UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Metolachlor – Atrazine), 9, PG III, Marine Pollutant

**IATA**

UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Metolachlor-Atrazine), 9, PG III,

**IMDG**

UN 3082, Environmentally hazardous substance, liquid, n.o.s. (Metolachlor-Atrazine), 9, PG III, Marine Pollutant.

**15. REGULATORY INFORMATION****International Inventories****TSCA**

All ingredients are listed or exempt from listing on Chemical Substance Inventory

**Legend:**

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*

**US Federal Regulations****CERCLA**

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Proprietary Solvent #2	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

**SARA 311/312 Hazard Categories**



<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

**SARA 313**

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Atrazine - 1912-24-9	1912-24-9	29.1-30.9	1.0
Proprietary Solvent #2	Proprietary	3.0-3.4	1.0

**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Atrazine 1912-24-9	X	X	X
Metolachlor II 51218-45-2	X		
Proprietary Solvent #1	X	X	X
Proprietary Solvent #2	X	X	X
Proprietary Solvent #3		X	X

**EPA Pesticide Registration Number** 66222-132**EPA Statement**

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:

**EPA Pesticide Label**

Signal Word: Caution

Harmful if swallowed or absorbed through skin. Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. Wear protective eyewear or clothing specified in the PPE section

**Difference between SDS and EPA pesticide label**

	<b>EPA</b>	<b>OSHA</b>
<b>Signal Word</b>	Caution	Warning
Acute toxicity - Oral	Harmful if swallowed	N/A
Acute toxicity - Dermal	Harmful if absorbed through skin	May be harmful in contact with skin
Acute toxicity - Inhalation	N/A	Harmful if inhaled
Skin corrosion/irritation	N/A	Causes mild skin irritation
Serious eye damage/eye irritation	Causes moderate eye irritation	
STOT - repeated exposure		May cause damage to organs through prolonged or repeated exposure

**16. OTHER INFORMATION****NFPA****Health Hazards****Flammability****Instability****Special Hazards**

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None

**HMIS****Health Hazards****Flammability****Physical Hazards****Personal Protection**

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See section 8

**Issue Date:**

14-May-2010

**Revision Date:**

16-Oct-2015

**Revision Note:**

Updated format from 01-Oct-2014

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**