



Safety Data Sheet

Issue Date: 12-May-2011

Revision Date: 25-Sept-2015

Version 2

1. IDENTIFICATION

Product Identifier

Product Name Direx 4L

Other means of identification

SDS # ADAMA-019D

Registration Number(s) EPA Reg. No. 66222-54

UN/ID No UN3082

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 White liquid

Physical State Liquid

Odor Odorless

Classification

Acute toxicity - Oral	Category 4
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2

Signal Word

Warning

Hazard Statements

Harmful if swallowed
Suspected of causing cancer
May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth

Precautionary Statements - Storage

Store locked up

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-%
Diuron	330-54-1	40.7
Proprietary Solvent	Proprietary	<6

4. FIRST-AID MEASURES

First Aid Measures

General Advice	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin Contact	Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice.

Most important symptoms and effects

Symptoms	Irritating to eyes, respiratory system & skin.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Dry chemical. Carbon dioxide (CO₂). Water spray (fog). Foam.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Negligible fire hazard.

Hazardous Combustion Products Smoke, fumes or vapors, and oxides of carbon.

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 Cover liquid spill with sand, earth or other non-combustible absorbent material. Sweep up and shovel into suitable containers for disposal. Dispose of in accordance with federal, state and local regulations.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Do not contaminate water, food, or feed by storage or disposal. Keep/store only in original container. Store locked up.

Packaging Materials Do not reuse container.

Incompatible Materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Diuron 330-54-1	TWA: 10 mg/m ³	(vacated) TWA: 10 mg/m ³	TWA: 10 mg/m ³
Proprietary Solvent	Ceiling: 100 mg/m ³ aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m ³	-

Appropriate engineering controls

Engineering Controls

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.

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Protective eyewear recommended.

Skin and Body Protection

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.

Respiratory Protection

NIOSH-approved respirator or mask in the absence of adequate ventilation.

General Hygiene Considerations

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. Follow all label instructions. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Odorless
Appearance	White liquid	Odor Threshold	Not determined
Color	White		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	6.25	@ 25°C	
Melting Point/Freezing Point	Not determined		
Boiling Point/Boiling Range	Not determined		
Flash Point	>93 °C / 200 °F	Tag Closed Cup	
Evaporation Rate	Not determined		
Flammability (Solid, Gas)	Not determined		
Upper Flammability Limits	Not determined		
Lower Flammability Limit	Not determined		
Vapor Pressure	Not determined		
Vapor Density	Not determined		
Specific Gravity	1.1786	@ 75°F (23°C)	
Water Solubility	Not determined		
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	494.0 mPa s		
Explosive Properties	Not determined		
Oxidizing Properties	Slight oxidizing agent and slight reducing agent		

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 Avoid contact with skin.

Inhalation Avoid breathing vapors or mists.

Ingestion Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Diuron 330-54-1	= 1017 mg/kg (Rat)	> 5 g/kg (Rat)	> 0.265 mg/L (Rat)
Proprietary Solvent	= 4000 mg/kg (Rat)	= 9530 µL/kg (Rabbit)	-

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 Suspected of causing cancer.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Numerical measures of toxicity

Acute Oral LD50 (Rat): >1,919 mg/kg

Acute Dermal LD50 (Rabbit): >5,000 mg/kg

Acute Inhalation LC50 (Rat): >2.02 mg/L (4-hr)

Eye Irritation: Minimally irritating.

Dermal Irritation: Non-irritating.

Dermal Sensitization: Not a skin sensitizer.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects. For terrestrial uses only. Do not apply directly to water or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. Do not clean equipment or dispose of equipment washwaters in a manner that will contaminate water sources. Apply this product only as specified on this label.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Diuron 330-54-1	0.022: 96 h <i>Desmodesmus subspicatus</i> mg/L EC50 0.036: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 static 0.1: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 0.0007: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static	13.4 - 15: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 13.4 - 15: 96 h <i>Pimephales promelas</i> mg/L LC50 static 2.3 - 3.3: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 4: 96 h <i>Lepomis macrochirus</i> mg/L LC50 1.5 - 2.54: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 14.7: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 2.9: 96 h <i>Cyprinus carpio</i> mg/L LC50	EC50 = 16.38 mg/L 5 min	1.4: 48 h <i>Daphnia magna</i> mg/L EC50 6.3 - 13: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Proprietary Solvent	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

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Diuron 330-54-1	2.82
Proprietary Solvent	-1.93

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

Pesticide wastes are acutely hazardous. 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 at the nearest EPA Regional Office for guidance.

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.

Contaminated Packaging

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

14. TRANSPORT INFORMATION

DOT

Package less than 25 gallons: Not regulated

Package more than 25 Gallons:

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Diuron)
Hazard Class	9
Packing Group	III
Reportable Quantity (RQ)	Diuron- 100 lbs (25 gallons of Diuron 4L ®)
Marine Pollutant	Yes if package over 119 Gallons (450 L)

IATA

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Diuron)
Hazard Class	9
Packing Group	III

IMDG

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s. (Diuron)
Hazard Class	9
Packing Group	III
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO

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

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Diuron 330-54-1	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Proprietary Solvent	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Diuron - 330-54-1	330-54-1	40.7	1.0
Glycol - 107-21-1	107-21-1	5.93	1.0

CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Diuron 330-54-1 (40.7)	100 lb			X

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Diuron - 330-54-1	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Diuron 330-54-1	X	X	X
Proprietary Solvent	X	X	X

EPA Pesticide Registration Number EPA Reg. No. 66222-54**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.

Difference between SDS and EPA pesticide label

	EPA	OSHA
Signal Word	Caution	Warning
Acute toxicity - Oral	Harmful if swallowed	Harmful if swallowed
Carcinogenicity	N/A	Suspected of causing cancer
STOT - repeated exposure	N/A	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:

12-May-2011

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25-Sept-2015

Revision Note:

Updated format from 19-Jun-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