



Safety Data Sheet

Issue Date: 25-Jun-2014

Revision Date: 14-Jan-2016

Version 3

1. IDENTIFICATION

Product Identifier

Product Name Karmex DF

Other means of identification

SDS # ADAMA-022F

Registration Number(s) EPA Reg. No. 66222-51

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 Beige pellets

Physical State Solid

Odor Odorless

Classification

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

Signal Word

Warning

Hazard Statements

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

**Precautionary Statements - Prevention**

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
 Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Call a poison center/doctor if you feel unwell
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 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 | 80 |

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**

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.

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|------------------|--|
| 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. Immediately call a poison center or doctor/physician. |
|------------------|--|

Most important symptoms and effects

| | |
|-----------------|--|
| Symptoms | Irritating to eyes, respiratory system & skin. Ingestion may cause drowsiness, hyperreflexia, irritability, diarrhea, hyperthermia and weight loss. Extreme overexposure may cause glycosuria, proteinuria, and aciduria. Long term exposure may also cause enlarging of the liver and/or spleen. May aggravate pre-existing skin conditions. Inhalation may aggravate respiratory problems. |
|-----------------|--|

Indication of any immediate medical attention and special treatment needed

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|---------------------------|------------------------|
| Notes to Physician | Treat symptomatically. |
|---------------------------|------------------------|

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

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

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|-------------------|-----------------------------------|
| Small Fire | Dry chemical or CO ₂ . |
|-------------------|-----------------------------------|

| | |
|-------------------|--------------------------|
| Large Fire | Use foam or water spray. |
|-------------------|--------------------------|

Unsuitable Extinguishing Media Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Specific Hazards Arising from the Chemical

Negligible fire hazard.

Hazardous Combustion Products Smoke, fumes or vapors, and oxides of carbon. Nitrogen oxides (NO_x). Hydrogen chloride.

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**

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|-----------------------------|--|
| 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. |
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|----------------------------------|--|
| 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

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|--------------------------------|---|
| 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. 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. Avoid contact with skin, eyes or clothing. Use only outdoors or in a well-ventilated area. Do not eat, drink, smoke, or apply cosmetics while handling this product.

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. Store at ambient conditions. Protect from excessive heat.

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 |

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 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.

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. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|-----------------------|---------------|-----------------------|----------------|
| Physical State | Solid | Odor | Odorless |
| Appearance | Beige pellets | Odor Threshold | Not determined |
| Color | Beige | | |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|------------------------------|-------------------------|-------------------------|
| pH | 6.8-9.0 | (1% solution) |
| Melting Point/Freezing Point | 158-159 °C / 316-318 °F | |
| Boiling Point/Boiling Range | Not applicable | |
| Flash Point | Not applicable | |
| Evaporation Rate | Not applicable | |
| 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 | 0.61-0.77 | |
| 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 | Not determined | |
| Explosive Properties | Not determined | |
| Oxidizing Properties | Not determined | |
| Bulk Density | 5.17lb/gal | |

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

Smoke, fumes or vapors, and oxides of carbon. Nitrogen oxides (NOx). Hydrogen chloride.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

| | |
|---------------------|--------------------------|
| Eye Contact | Avoid contact with eyes. |
| Skin Contact | Avoid contact with skin. |
| Inhalation | Harmful if inhaled. |
| 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) |

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.

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

Product Information (Numerical measures of toxicity)

Acute Oral LD50 (Rat): >1,879 mg/kg

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

Acute Inhalation LC50 (Rat): >2.03 mg/L (4-hr)

Eye Irritation: Mildly irritating.

Dermal Irritation: Non-irritating.

Dermal Sensitization: Not a skin sensitizer.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects. 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 by cleaning of equipment or disposal of wastes. Do not apply when weather conditions favor drift from areas treated. Cover or incorporate spills.

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 static 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 static 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 |

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

| Chemical Name | Partition Coefficient |
|--------------------|-----------------------|
| Diuron 330-54-1 | 2.82 |

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 125 lbs.: Not regulated

Package more than 125 Lbs.:

UN/ID No

UN3077

Proper Shipping Name

Environmentally hazardous substance, solid, n.o.s. (Diuron), RQ

Hazard Class

9

Packing Group

III

Reportable Quantity (RQ)

Diuron- 100 lbs

Marine Pollutant

Yes if package larger than 882 Lbs. (450 Kg)

IATA**UN/ID No**

UN3077

Proper Shipping Name

Environmentally hazardous substance, solid, n.o.s. (Diuron)

Hazard Class

9

Packing Group

III

IMDG**UN/ID No**

UN3077

Proper Shipping Name

Environmentally hazardous substance, solid, n.o.s. (Diuron)

Hazard Class

9

Packing Group

III

Marine Pollutant

Yes

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) |
|--------------------|--------------------------|----------------|---|
| Diuron 330-54-1 | 100 lb | | RQ 100 lb final RQ RQ 45.4 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 | 77.6-82.4 | 1.0 |

CWA (Clean Water Act)

| Component | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|----------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Diuron 330-54-1 (77.6-82.4) | 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 |

EPA Pesticide Registration Number EPA Reg. No. 66222-51

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. Causes moderate eye irritation. Avoid contact with eyes or clothing.

Difference between SDS and EPA pesticide label

| | EPA | OSHA |
|-----------------------------------|--------------------------------|---|
| Signal Word | Caution | Warning |
| Acute toxicity - Oral | Harmful if swallowed | Harmful if swallowed |
| Acute Toxicity – Inhalation | N/A | Harmful if inhaled |
| Serious eye damage/eye irritation | Causes moderate eye irritation | N/A |
| STOT - repeated exposure | N/A | May cause damage to organs through prolonged or repeated exposure |

16. OTHER INFORMATION**NFPA****Health Hazards**

2

Flammability

0

Instability

0

Special Hazards

None

HMIS**Health Hazards**

2

Flammability

0

Physical Hazards

0

Personal Protection

See section 8

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25-Jun-2014

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14-Jan-2016

Revision Note:

Version 2: Updated format from 25-Jun-2014

Version 3: Updated data from 2-Oct-2016

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