



Safety Data Sheet

Issue Date: 03-Dec-2009

Revision Date: 9-Oct-2015

Version 2

1. IDENTIFICATION

Product Identifier

Product Name **Equus DF**

Other means of identification

SDS # ADAMA-054

Registration Number(s) EPA Reg. No. 66222-149

UN/ID No UN2811

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 Brown powder

Physical State Solid

Odor Slight

Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3

Hazards Not Otherwise Classified (HNOC)

May be harmful in contact with skin

Signal Word

Danger

Hazard Statements

Fatal if inhaled
 Causes serious eye damage
 Suspected of causing cancer
 May cause respiratory irritation

**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
 Do not breathe dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wear respiratory protection
 Wear protective gloves

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention
 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/physician
 IF ON SKIN: Wash with plenty of soap and water
 If skin irritation or rash occurs: Get medical advice/attention
 Wash contaminated clothing before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a poison center or doctor/physician

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

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-%
Chlorothalonil	1897-45-6	80.03-84.97
Proprietary Solvent	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. Immediately call a poison center or doctor/physician.
Skin Contact	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
Inhalation	Remove to fresh air. Give oxygen if breathing is difficult. If breathing has stopped, call 911, give artificial respiration. Call a physician or poison control center immediately.
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. If conscious, give 1 glass of water to dilute.

Most important symptoms and effects

Symptoms	Direct contact with skin can cause irritation or redness. Causes serious eye damage. May cause respiratory irritation. Vapors may cause irritation to nose, throat, and respiratory tract. High vapor concentrations may cause central nervous system depression which can lead to dizziness, weakness and headache.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically. Persons having temporary irritation may respond to treatment with antihistamines or steroid creams and/or systemic steroids.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon dioxide, or dry foam. Water spray (fog). Dry chemical.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Product is not flammable.

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. 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

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	Vacuum or sweep up material and place in a disposal container. Wash area with soap and water. Pick up wash liquid with inert absorbent and place in a chemical waste container for disposal.

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 contaminated clothing before reuse. Avoid spilling. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Open containers cautiously. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink, smoke, or apply cosmetics while handling this product. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid creating dust.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	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. Store locked up. Protect from excessive heat. Keep away from food, drink and animal feeding stuffs. Do not use food or drink containers for mixing or storage. Store at ambient conditions.
Incompatible Materials	Metals such as aluminum, tin, and zinc. Alkaline conditions.

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

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
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.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with side shields (or goggles). Goggles are 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	Slight
Appearance	Brown powder	Odor Threshold	Not determined
Color	Brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	8.8	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	> 350 °C / >662 °F	
Flash Point	Not applicable	
Evaporation Rate	Not applicable	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	Not applicable	
Lower Flammability Limit	Not applicable	
Vapor Pressure	5.72 x 10 ⁻⁷ torr @ 25°C	
Vapor Density	Not determined	
Specific Gravity	Not determined	
Water Solubility	Dispersible	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not applicable	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	
Density	0.662 g/ml @ 24°C	

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. Store away from foodstuffs, animal feed, and incompatibles. See Sec. 7 Handling & Storage. Contact with incompatible materials. Avoid generation of dust.

Incompatible Materials

Metals such as aluminum, tin, and zinc. Alkaline conditions.

Hazardous Decomposition Products

May emit toxic fumes under fire conditions. Hydrogen chloride.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

Eye Contact	Causes serious eye damage.
Skin Contact	May be harmful in contact with skin.
Inhalation	Fatal if inhaled.
Ingestion	Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Chlorothalonil 1897-45-6	= 10 g/kg (Rat)	> 2500 mg/kg (Rat) > 2000 mg/kg (Rabbit)	= 0.217 mg/L (Rat) 4 h = 0.31 mg/L (Rat) 1 h
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 The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested.

Chemical Name	ACGIH	IARC	NTP	OSHA
Chlorothalonil 1897-45-6		Group 2B		X

Legend

IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

STOT - single exposure May cause respiratory irritation.

Product Information (Numerical measures of toxicity)

Acute Oral LD50 (Rat): >5,000 mg/kg

Acute Dermal LD50 (Rabbit): >2,000 mg/kg

Acute Inhalation LC50 (Rat): >0.056 mg/L (4-hr)

Eye Irritation: Severely irritating.

Dermal Irritation: Non-irritating.

Dermal Sensitization: Not a skin sensitizer.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects. This product is toxic to aquatic invertebrates and wildlife. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water or rinsate. This chemical is known to leach through soil into groundwater under certain conditions as a result of labeled use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Chlorothalonil 1897-45-6	0.57: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 0.0068: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static	0.012: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 semi-static 0.0076: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through 0.0221 - 0.032: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 0.045 - 0.057: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static		0.0342 - 0.143: 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
Chlorothalonil 1897-45-6	2.9

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.

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Chlorothalonil - 1897-45-6	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Chlorothalonil 1897-45-6	X	X	X
Proprietary Solvent	X	X	X

EPA Pesticide Registration Number 66222-149**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: Warning

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. May be fatal if inhaled. Do not breathe dust or spray mist. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid prolonged contact with skin. Do not take internally.

Note to user: This product may produce mild bronchial irritation and temporary irritation of the skin characterized by redness or rash on exposed skin areas. Persons having allergic reactions must contact a physician

Difference between SDS and EPA pesticide label

	EPA	OSHA
Signal Word	Warning	Danger
Acute toxicity - Dermal	Harmful if absorbed through skin	May be harmful in contact with skin
Acute toxicity - Inhalation (Dusts/Mists)	May be fatal if inhaled	Fatal if inhaled
Skin corrosion/irritation	May produce temporary irritation of the skin	N/A
Serious eye damage/eye irritation	Causes substantial but temporary eye injury	Causes serious eye damage
Skin sensitization	Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals	N/A
Carcinogenicity	N/A	Suspected of causing cancer
STOT - single exposure	May produce mild bronchial irritation	May cause respiratory irritation

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

Not determined

Not determined

Not determined

Not determined

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

Not determined

Not determined

Not determined

Not determined

Issue Date:

03-Dec-2009

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9-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