

MONSANTO COMPANY

Safety Data Sheet

Acceleron® DX-612 Fungicide Seed Treatment

Revision date : 22-JUN-2012 Version: 1.0

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1. Product and Company Identification

Acceleron® DX-612 Fungicide Seed Treatment

MONSANTO COMPANY, 800 N. LINDBERGH BLVD., ST. LOUIS, MO 63167

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT

Call CHEMTREC - Day or Night - 1-800-424-9300 Toll free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted)

For additional non-emergency information, call: 1-800-332-3111

Synonyms: Fluxapyroxad

2. Hazards Identification

Emergency overview

CAUTION:
KEEP OUT OF REACH OF CHILDREN.
HARMFUL IF SWALLOWED.

See Product Label for additional precautionary statements.

State of matter: liquid
Colour: off-white, pink tint
Odour: faint odour, sweetish

Potential health effects

Primary routes of exposure:

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Acute toxicity:

Slightly toxic after single ingestion. Relatively nontoxic after short-term inhalation. Relatively nontoxic after short-term skin contact.

Irritation / corrosion:

May cause slight but temporary irritation to the eyes. May cause slight irritation to the skin.

Sensitization:

Skin sensitizing effects were not observed in animal studies.

Medical conditions aggravated by overexposure:

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

Potential environmental effects**Aquatic toxicity:**

Very toxic (acute effect) to fish. Acutely toxic for aquatic invertebrates. Very toxic (acute effect) to aquatic plants.

3. Composition / Information on Ingredients

| <u>CAS Number</u> | <u>Content (W/W)</u> | <u>Chemical name</u> |
|-------------------|----------------------|-------------------------|
| 907204-31-3 | 28.7 % | Fluxapyroxad |
| 56-81-5 | <= 10.0 % | glycerol |
| | <= 71.3 % | Proprietary ingredients |

4. First-Aid Measures**General advice:**

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary.

If on skin:

Rinse skin immediately with plenty of water for 15 - 20 minutes.

If in eyes:

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Note to physician

Antidote: No known specific antidote.
Treatment: Treat symptomatically.

5. Fire-Fighting Measures

| | | |
|----------------------------|----------|--|
| Flash point: | > 100 °C | No flash point - Measurement made up to the boiling point. |
| Autoignition: | 431 °C | (DIN EN 14522) |
| Self-ignition temperature: | | Based on the water content the product does not ignite. |

Suitable extinguishing media:

water spray, carbon dioxide, foam, dry powder

Unsuitable extinguishing media for safety reasons:

water jet

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, nitrogen oxides
The substances/groups of substances mentioned can be released in case of fire.

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures**Personal precautions:**

Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

Environmental precautions:

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

Cleanup:

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage**Handling****General advice:**

RECOMMENDATIONS ARE FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS. PESTICIDE APPLICATORS & WORKERS must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed. Protect against heat. Protect contents from the effects of light. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

Storage**General advice:**

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination.

Storage incompatibility:

General advice: Segregate from foods and animal feeds.

Temperature tolerance

Protect from temperatures below: 0 °C

Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls and Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Components with workplace control parameters

| | | |
|----------|----------|--|
| glycerol | OSHA PEL | 5 mg/m ³ Respirable fraction ; PEL 15 mg/m ³ |
| | | Total dust ; |
| | ACGIH T | WA value 10 mg/m ³ Mist ; |

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Remove contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

| | | |
|---|-------------------------|-----------------------------|
| Form: | liquid, suspension | |
| Odour: | faint odour, sweetish | |
| Colour: | off-white, pink tint | |
| pH value: | 6.8 | (1 %(m)) |
| boiling temperature: | 100 °C | |
| Vapour pressure: | | (20 °C) No data available. |
| Density: | 1.134 g/cm ³ | (20 °C) |
| Partitioning coefficient n-octanol/water (log Pow): | | not applicable |

Viscosity, dynamic: 24 mPa.s (20 °C)
Solubility in water: misc ble

10. Stability and Reactivity

Conditions to avoid:

Avoid all sources of ignition: heat, sparks, open flame. Avoid prolonged storage. Avoid electro-static discharge. Avoid contamination. Avoid prolonged exposure to extreme heat. Avoid extreme temperatures.

Substances to avoid:

strong acids, strong bases, strong oxidizing agents

Hazardous reactions:

No hazardous reactions known.

Decomposition products:

Hazardous decomposition products: No data available.

Thermal decomposition:

Possible thermal decomposition products:

carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrocarbons

Stable at ambient temperature. If product is heated above decomposition temperature, toxic vapours will be released.

Corrosion to metals:

Corrosive effects to metal are not anticipated.

Oxidizing properties:

Not an oxidizer.

11. Toxicological information

Acute toxicity**Oral:**

Type of value: LD50

Species: rat (female)

Value: > 2,000 mg/kg

No mortality was observed.

Inhalation:

Type of value: LC50

Species: rat (male/female)

Value: > 6.2 mg/l

Exposure time: 4 h

Dermal:

Type of value: LD50

Species: rat (male/female)

Value: > 5,000 mg/kg

No mortality was observed.

Irritation / corrosion**Skin:**

Species: rabbit

Result: Slightly irritating.

Eye:

Species: rabbit

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Result: Minimally irritating.

Sensitization:

Buehler test

Species: guinea pig

Result: Skin sensitizing effects were not observed in animal studies.

Genetic toxicity

Information on: Fluxapyroxad

No mutagenic effect was found in various tests with bacteria and mammals.

Carcinogenicity

Information on: Fluxapyroxad

Limited evidence of a carcinogenic effect.

Reproductive toxicity

Information on: Fluxapyroxad

The results of animal studies gave no indication of a fertility impairing effect.

Development:

Information on: Fluxapyroxad

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Other Information:

Misuse can be harmful to health.

12. Ecological Information

Fish

Information on: Fluxapyroxad

Acute:

Fish test acute semistatic

Cyprinus carpio/LC50 (96 h): 0.29 mg/l

OECD Guideline 203 static

Oncorhynchus mykiss/LC50 (96 h): 0.546 mg/l

OECD Guideline 203 static

Lepomis macrochirus/LC50 (96 h): 1.15 mg/l

OECD Guideline 203 static

Pimephales promelas/LC50 (96 h): 0.466 mg/l

Aquatic invertebrates

Information on: Fluxapyroxad

Acute:

OECD Guideline 202, part 1 static

Daphnia magna/EC50 (48 h): 7.07 mg/l

Aquatic plants

Information on: Fluxapyroxad

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Toxicity to aquatic plants:
OECD Guideline 201 green algae/EC50 (72 h): 0.70 mg/l

Degradability / Persistence Biological / Abiological Degradation

Information on: Fluxapyroxad

Test method: OECD 301B; ISO 9439; 92/69/EEC, C.4-C (aerobic),

Method of analysis: CO2 formation relative to the theoretical value

Degree of elimination: < 10 % (28 d)

Evaluation: Not readily biodegradable (by OECD criteria).

Other adverse effects:

The product should not be allowed to reach either sewage waters or water purification plants.

13. Disposal considerations

Waste disposal of substance:

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport Information

Land transport

USDOT

Not regulated for US domestic ground transportation.

Sea transport

IMDG

Hazard class: 9

Packing group: III

ID number: UN 3082

Hazard label: 9, EHSM

Marine pollutant: YES

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

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(contains FLUXAPYROXAD)

Air transport

IATA/ICAO

Hazard class: 9
Packing group: III
ID number: UN 3082
Hazard label: 9, EHSM
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(contains FLUXAPYROXAD)

15. Regulatory Information**Federal Regulations****Registration status:**

Chemical TSCA, US blocked / not listed

Crop Protection TSCA, US released / exempt

OSHA hazard category: Chronic target organ effects reported; ACGIH TLV established**EPCRA 311/312 (Hazard categories):** Acute; Chronic**State regulations****CA Prop. 65:**

CA PROP 65: An assessment has determined that there is no significant risk present., PROP 65 warning(s) are not required for this product.

16. Other Information

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

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