

**MONSANTO COMPANY**  
Safety Data Sheet  
Commercial Product

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## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name**

**Harness® Xtra Herbicide**

**EPA Reg. No.**

524-480

**Chemical name**

Not applicable.

**Synonyms**

None.

**Company**

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

**Telephone:** 800-332-3111, **Fax:** 314-694-5557

**E-mail:** TS-SAFETYDATASHEET@DOMINO.MONSANTO.COM

**Emergency numbers**

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., Puerto Rico, Canada, or Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

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## 2. HAZARDS IDENTIFICATION

**Emergency overview**

**Appearance and odour (colour/form/odour):** Pink / Suspension / Mild

RESTRICTED USE PESTICIDE due to ground and surface water concerns.

CAUTION!

HARMFUL IF SWALLOWED

CAUSES EYE IRRITATION

**Potential health effects**

**Likely routes of exposure**

Skin contact, eye contact, inhalation

**Eye contact, short term**

May cause temporary eye irritation.

**Skin contact, short term**

Not expected to produce significant adverse effects when recommended use instructions are followed.

May cause allergic skin reaction.

**Inhalation, short term**

Harmful by inhalation.

**Single ingestion**

Not expected to produce significant adverse effects when recommended use instructions are followed.

Refer to section 11 for toxicological and section 12 for environmental information.

**OSHA Status**

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Active ingredient

2-chloro-N-(ethoxymethyl)-N-(2-ethyl-6-methylphenyl) acetamide; { Acetochlor }  
6-chloro-N-ethyl-N'-(1-methylethyl)-1,3,5-triazine-2,4-diamine; { Atrazine }

#### Composition

| COMPONENT            | CAS No.     | % by weight (approximate) |
|----------------------|-------------|---------------------------|
| Acetochlor           | 34256-82-1  | 46.3                      |
| Atrazine             | 1912-24-9   | 18.3                      |
| Furilazole (Safener) | 121776-33-8 | <=4                       |
| Surfactant(s)        |             | <=5                       |
| Other ingredients    |             | <=27                      |

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

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### 4. FIRST AID MEASURES

Use personal protection recommended in section 8.

#### Eye contact

If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

#### Skin contact

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Sensitized persons should avoid further contact and reuse of contaminated clothing.

#### Inhalation

If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.

#### Ingestion

Call poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison center or doctor. Do not give anything by mouth to an unconscious person.

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### 5. FIRE-FIGHTING MEASURES

#### Flash point

Does not flash.

#### Extinguishing media

Recommended: Water, foam, dry chemical, carbon dioxide (CO2)

#### Unusual fire and explosion hazards

None.  
Minimise use of water to prevent environmental contamination.  
Environmental precautions: see section 6.

#### Fire fighting equipment

Self-contained breathing apparatus.  
Equipment should be thoroughly decontaminated after use.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Use personal protection recommended in section 8.

### Environmental precautions

- Minimise spread.
- Contain spillage with sand bags or other means.
- Keep out of drains, sewers, ditches and water ways.
- Do NOT contaminate water when disposing of rinse waters.

### Methods for cleaning up

- Contain spillage with sand bags or other means.
- Absorb in earth, sand or absorbent material.
- Dig up heavily contaminated soil.
- Collect in containers for disposal.
- Place leaking containers in oversize leakproof drums for transport.
- Flush residues with small quantities of water.
- Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

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## 7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

### Handling

- Avoid contact with eyes, skin and clothing.
- Avoid prolonged or repeated contact with skin.
- When using do not eat, drink or smoke.
- Wash hands thoroughly after handling or contact.
- Wash contaminated clothing before re-use.
- Thoroughly clean equipment after use.
- Do not contaminate drains, sewers and water ways when disposing of equipment rinse water.
- Refer to section 13 of the safety data sheet for disposal of rinse water.
- Emptied containers retain vapour and product residue.
- FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMPTIED.**

### Storage

- Compatible materials for storage: stainless steel, Heresite[™]-lined steel, high-density polyethylene (HDPE), polypropylene (PP), Teflon[™], polyvinylidene difluoride (PVDF)
- Incompatible materials for storage: unlined mild steel, aluminium, polyvinyl chloride (PVC), Contact with mild steel may cause color change and reduce product's ability to emulsify with water.
- Keep out of reach of children.
- Keep away from food, drink and animal feed.
- Keep only in the original container.
- Use appropriate containment to avoid environmental contamination.
- Minimum shelf life: 2 years.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Airborne exposure limits

| Components | Exposure Guidelines   |
|------------|---|
| Acetochlor | No specific occupational exposure limit has been established. |

|                      |  |
|----------------------|--|
| Atrazine             | TLV (ACGIH): 5 mg/m <sup>3</sup> (TWA)<br>PEL (OSHA): No specific occupational exposure limit has been established.  |
| Furilazole (Safener) | TLV (ACGIH): No specific occupational exposure limit has been established.<br>PEL (OSHA): No specific occupational exposure limit has been established.<br>NCEL (New Chemical Exposure Limit): 0.1 mg/m <sup>3</sup> (TWA) |
| Surfactant(s)        | No specific occupational exposure limit has been established.  |
| Other ingredients    | No specific occupational exposure limit has been established.  |

**Engineering controls**

No special requirement when used as recommended.

**Eye protection**

If there is significant potential for contact:  
 Wear chemical goggles.

**Skin protection**

Wear chemical resistant gloves.  
 Applicators and other handlers must wear:  
 Wear long sleeved shirt, long pants and shoes with socks.  
 Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment.  
 If no such instructions for washables, use detergent and hot water.

**Respiratory protection**

If airborne exposure is excessive:  
 Wear respirator.  
 Full facepiece/hood/helmet respirator replaces need for chemical goggles.  
 Respiratory protection programs must comply with all local/regional/national regulations.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

|   |                             |
|---|-----------------------------|
| Colour/colour range:                            | Pink                        |
| Odour:  | Mild                        |
| Form:   | Suspension                  |
| Physical form changes (melting, boiling, etc.): |                             |
| Melting point:                                  | Not applicable.             |
| Boiling point:                                  | No data.                    |
| Flash point:                                    | Does not flash.             |
| Explosive properties:                           | No explosive properties     |
| Auto ignition temperature:                      | No data.                    |
| Specific gravity:                               | 1.1 20 °C / 15.6 °C         |
| Vapour pressure:                                | No significant volatility.  |
| Vapour density:                                 | Not applicable.             |
| Evaporation rate:                               | No data.                    |
| Dynamic viscosity:                              | 300 cP 10 °C; Method: Haake |

|                        |   |
|------------------------|---|
| Kinematic viscosity:   | No data.                                |
| Density:               | 1.019 - 1.112 g/cm <sup>3</sup> @ 20 °C |
| Solubility:            | Water: Emulsifies.                      |
| pH:                    | 7.0 - 8.5 @ 50 g/l                      |
| Partition coefficient: | log Pow: 4.14 20 °C (acetochlor)        |
| Partition coefficient: | log Pow: 2.5 25 °C (atrazine)           |

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## 10. STABILITY AND REACTIVITY

### Stability

Stable under normal conditions of handling and storage.

### Oxidizing properties

No data.

### Materials to avoid/Reactivity

Corrosive to mild steel.

Corrosive to aluminium.

### Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

### Self-accelerating decomposition temperature (SADT)

No data.

### Hazardous polymerization

Does not occur.

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## 11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Data obtained on similar products and on components are summarized below.

### Similar formulation

#### Acute oral toxicity

**Rat, LD50:** 1,249 mg/kg body weight

Other effects: breathing difficulty, decreased activity, weight loss, prostration, decrease of food consumption

FIFRA category III.

Slightly toxic.

#### Acute dermal toxicity

**Rat, LD50:** > 5,000 mg/kg body weight

FIFRA category IV.

Practically non-toxic.

#### Skin irritation

**Rabbit, 6 animals, OECD 404 test:**

Days to heal: 2

Primary Irritation Index (PII): 0.4/8.0

FIFRA category IV.

Essentially non irritating.

#### Eye irritation

**Rabbit, 6 animals, OECD 405 test:**

Days to heal: 7

FIFRA category III.  
Slight irritation.

**Acute inhalation toxicity**

**Rat, LC50, 4 hours, aerosol:**

Practically non-toxic.  
FIFRA category IV.  
No 4-hr LC50 at the maximum achievable concentration. No mortality.

**Skin sensitization**

**Guinea pig, 3-induction Buehler test:**

Positive incidence: 10 %  
Negative.

**Acetochlor**

**Mutagenicity**

**In vivo mutagenicity test(s):**

Not mutagenic.

**In vitro mutagenicity test(s):**

Mutagenic/Genotoxic in some assays.

**Repeated dose toxicity**

**Rat, oral, 90 days:**

NOAEL toxicity: 18 mg/kg body weight/day  
Target organs/systems: none  
Other effects: decrease of body weight gain, decrease of food consumption

**Rabbit, dermal, 21 days:**

NOAEL toxicity: 400 mg/kg body weight/day  
Target organs/systems: none  
Other effects: increased mortality, decrease of body weight gain

**Chronic effects/carcinogenicity**

**Rat, oral, 2 years:**

NOAEL toxicity: 10 mg/kg body weight/day  
Target organs/systems: liver, kidneys  
Other effects: decrease of body weight gain, organ weight change, blood biochemistry effects  
NOEL tumour: 10 mg/kg body weight/day  
Tumours: nose, thyroid; Tumours not relevant for man based on mechanistic data.  
Tumours: liver; Tumours only above MTD.

**Mouse, oral, 18 months:**

NOAEL toxicity: 1.1 mg/kg body weight/day  
Target organs/systems: kidneys, liver  
Other effects: histopathologic effects, haematological effects, decrease of body weight gain  
NOEL tumour: 1.1 mg/kg body weight/day  
Tumours: lung, histiocytic sarcoma; Tumours probably not related to treatment.  
Tumours: liver; Tumours only above MTD.

**Toxicity to reproduction/fertility**

**Rat, oral, 2 generations:**

NOAEL toxicity: 21 mg/kg body weight/day  
NOAEL reproduction: 66 mg/kg body weight/day  
Target organs/systems in parents: liver, kidneys, thyroid  
Other effects in parents: decrease of body weight gain, organ weight change, histopathologic effects  
Target organs/systems in pups: none  
Other effects in pups: decrease of body weight gain, change in sexual maturation landmarks  
Effects on offspring only observed with maternal toxicity.

**Developmental toxicity/teratogenicity**

**Rat, oral, 6 - 18 days of gestation:**

NOAEL toxicity: 200 mg/kg body weight  
NOAEL development: 400 mg/kg body weight  
Target organs/systems in mother animal: none

Other effects in mother animal: decrease of body weight gain  
No adverse treatment related effects in offspring.

**Rabbit, oral, 7 - 19 days of gestation:**

NOAEL toxicity: 100 mg/kg body weight/day  
NOAEL development: 300 mg/kg body weight/day  
Target organs/systems in mother animal: none  
Other effects in mother animal: decrease of body weight gain  
No adverse treatment related effects in offspring.

**Acute neurotoxicity**

**Rat, oral, single dose, gavage:**

NOAEL: 150 mg/kg body weight  
Other effects: decreased activity

**Repeated dose neurotoxicity**

**Rat, oral, 13 weeks, dietary:**

NOAEL: 52 mg/kg body weight/day  
Target organs/systems: none  
Other effects: decrease of body weight gain, decrease of food consumption  
Not neurotoxic.

**EXPERIENCE WITH HUMAN EXPOSURE**

**Skin contact, short term, occupational:**

**Skin effects:** sensitization in susceptible individuals

**Atrazine**

**Mutagenicity**

**Ames test(s):**

Not mutagenic without metabolic activation.

**In vivo chromosomal aberration test(s):**

Not mutagenic.

**In vitro DNA-repair test(s):**

Not mutagenic.

**Dominant lethal test(s):**

Not mutagenic.

**Repeated dose toxicity**

**Rat, oral, 90 days:**

NOAEL toxicity: 3.3 mg/kg body weight/day  
Target organs/systems: none  
Other effects: decrease of body weight gain

**Rabbit, dermal, 25 days:**

NOAEL toxicity: 10 mg/kg body weight/day  
Target organs/systems: spleen  
Other effects: decrease of food consumption, weight loss, organ weight change, haematological effects, histopathologic effects, blood biochemistry effects

**Chronic effects/carcinogenicity**

**Rat, oral, 24 months:**

NOAEL toxicity: 3.5 mg/kg body weight/day  
Target organs/systems: eyes, kidneys, liver, mammary gland, prostate, skeletal muscle  
Other effects: decrease of food consumption, weight loss, organ weight change, haematological effects, histopathologic effects, blood biochemistry effects  
NOEL tumour: 0.45 mg/kg body weight/day  
Tumours: mammary gland, (adenocarcinoma)  
Tumours only at or above MTD. Tumours not relevant for man based on mechanistic data.

**Mouse, oral, 91 weeks:**

NOAEL toxicity: 43 mg/kg body weight/day  
Target organs/systems: heart  
Other effects: decrease of food consumption, weight loss, organ weight change, histopathologic effects

NOEL tumour: ~ 400 mg/kg body weight/day

Tumours not related to treatment.

#### **Toxicity to reproduction/fertility**

##### **Rat, oral, 2 generations:**

NOAEL toxicity: 50 mg/kg diet

NOAEL reproduction: 500 mg/kg diet

Target organs/systems in parents: none

Other effects in parents: decrease of body weight gain

Target organs/systems in pups: none

Other effects in pups: none

#### **Developmental toxicity/teratogenicity**

##### **Rat, oral, 6 - 15 days of gestation:**

NOAEL toxicity: 10 mg/kg body weight

NOAEL development: 10 mg/kg body weight

Other effects in mother animal: weight loss, decrease of body weight gain, decrease of survival

Developmental effects: weight loss, delayed ossification

Effects on offspring only observed with maternal toxicity.

##### **Rabbit, oral, 7 - 19 days of gestation:**

NOAEL toxicity: < 1 mg/kg body weight

NOAEL development: 1 mg/kg body weight

Other effects in mother animal: weight loss, decrease of survival

Developmental effects: weight loss, post-implantation loss, delayed ossification

Effects on offspring only observed with maternal toxicity.

#### **Furilazole (Safener)**

#### **Mutagenicity**

##### **In vitro and in vivo mutagenicity test(s):**

Not mutagenic on the basis of weight-of-evidence analysis.

#### **Repeated dose toxicity**

##### **Rat, oral, 3 months:**

NOAEL toxicity: 7 mg/kg body weight/day

Target organs/systems: liver

Other effects: decrease of food consumption, decrease of body weight gain, organ weight change,

haematological effects, histopathologic effects

##### **Rat, dermal, 21 days:**

NOEL toxicity: 250 mg/kg body weight/day

Target organs/systems: none

Other effects: blood biochemistry effects

#### **Chronic effects/carcinogenicity**

##### **Rat, oral, 2 years:**

NOAEL toxicity: 0.26 mg/kg body weight/day

Target organs/systems: liver, kidneys

Other effects: decrease of body weight gain, organ weight change, histopathologic effects, blood biochemistry effects

NOEL tumour: 6.03 mg/kg body weight/day

Tumours: liver, (adenoma), (carcinoma)

##### **Mouse, oral, 18 months:**

NOAEL toxicity: 5.9 mg/kg body weight/day

Target organs/systems: liver, lung

Other effects: increased mortality, blood biochemistry effects, organ weight change, histopathologic effects

NOEL tumour: 5.9 mg/kg body weight/day

Tumours: liver, (adenoma), (carcinoma)

Tumours: lung, (adenoma), (carcinoma)

#### **Toxicity to reproduction/fertility**

##### **Rat, oral, 2 generations:**

NOAEL toxicity: 10 mg/kg body weight/day

NOAEL reproduction: 99 mg/kg body weight/day  
Target organs/systems in parents: kidneys, liver  
Other effects in parents: decrease of body weight gain, histopathologic effects  
Target organs/systems in pups: none  
Other effects in pups: none

#### **Developmental toxicity/teratogenicity**

##### **Rat, oral, 6 - 15 days of gestation:**

NOAEL toxicity: 10 mg/kg body weight  
NOAEL development: 10 mg/kg body weight  
Target organs/systems in mother animal: liver  
Other effects in mother animal: organ weight change  
Developmental effects: post-implantation loss  
Effects on offspring only observed with maternal toxicity.

##### **Rabbit, oral, 7 - 19 days of gestation:**

NOAEL toxicity: 10 mg/kg body weight/day  
NOAEL development:  $\geq$  50 mg/kg body weight/day  
Target organs/systems in mother animal: none  
Other effects in mother animal: weight loss, decrease of body weight gain, decrease of food consumption  
Developmental effects: none  
Other effects in foetus: none

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## **12. ECOLOGICAL INFORMATION**

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on product, similar products and on components are summarized below.

#### **Aquatic toxicity, fish**

##### **Rainbow trout (*Oncorhynchus mykiss*):**

Acute toxicity, 96 hours, static, LC50: 1.2 mg/L  
Moderately toxic.

#### **Avian toxicity**

##### **Bobwhite quail (*Colinus virginianus*):**

Acute oral toxicity, single dose, LD50: 999 mg/kg body weight  
Slightly toxic.

#### **Similar formulation**

#### **Aquatic toxicity, algae/aquatic plants**

##### **Green algae (*Selenastrum capricornutum*):**

Acute toxicity, 72 hours, static, EbC50 (biomass): 5.01  $\mu$ g/L  
Very highly toxic.

#### **Acetochlor**

#### **Aquatic toxicity, invertebrates**

##### **Water flea (*Daphnia magna*):**

Acute toxicity, 48 hours, static, EC50: 8.6 - 16 mg/L  
Moderately toxic.

#### **Arthropod toxicity**

##### **Honey bee (*Apis mellifera*):**

Oral, 48 hours, LD50:  $>$  100  $\mu$ g/bee  
Practically non-toxic.

##### **Honey bee (*Apis mellifera*):**

Contact, 48 hours, LD50:  $>$  200  $\mu$ g/bee  
Practically non-toxic.

#### **Soil organism toxicity, invertebrates**

**Earthworm (*Eisenia foetida*):**

Acute toxicity, 14 days, LC50: 211 - 397 mg/kg dry soil  
Slightly toxic.

**Bioaccumulation**

**Bluegill sunfish (*Lepomis macrochirus*):**

Whole fish: BCF: 20  
Rapid depuration after end of exposure.

**Dissipation**

**Water, aerobic, 20 °C:**

Half life: 25.9 - 55.1 days

**Soil, aerobic, 20 °C:**

Half life: 3.4 - 29 days  
Koc: 74 - 422

**Atrazine**

**Aquatic toxicity, invertebrates**

**Water flea (*Daphnia magna*):**

Acute toxicity, 48 hours, EC50: 6.9 mg/L  
Moderately toxic.

**Arthropod toxicity**

**Honey bee (*Apis mellifera*):**

Contact, 48 hours, LD50: > 97 µg/bee

**Bioaccumulation**

**Bluegill sunfish (*Lepomis macrochirus*):**

Edible portion: BCF: 8  
Rapid depuration after end of exposure.

**Bluegill sunfish (*Lepomis macrochirus*):**

Whole fish: BCF: 15  
Rapid depuration after end of exposure.

**Furilazole (Safener)**

**Aquatic toxicity, invertebrates**

**Water flea (*Daphnia magna*):**

Acute toxicity, 48 hours, static, EC50: 26 mg/L  
Slightly toxic.

**Arthropod toxicity**

**Honey bee (*Apis mellifera*):**

Contact, 48 hours, LD50: > 100 µg/bee  
Practically non-toxic.

**Photochemical degradation**

**Water:**

Half life: 30 days

**Dissipation**

**Soil, aerobic, 20 °C:**

Half life: 52 - 78 days  
Koc: 56 - 341 L/kg

**Water, aerobic, 20 °C:**

Half life: 6 days

**Biodegradation**

**Manometric respirometry test:**

Degradation: 1 % within 28 days  
Not readily biodegradable.

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## 13. DISPOSAL CONSIDERATIONS

### Product

Excess product may be disposed of by agricultural use according to label instructions.  
Keep out of drains, sewers, ditches and water ways.  
Recycle if appropriate facilities/equipment available.  
Burn in special, controlled high temperature incinerator.  
Follow all local/regional/national/international regulations.

### Container

See the individual container label for disposal information.  
Emptied containers retain vapour and product residue.  
Observe all labelled safeguards until container is cleaned, reconditioned or destroyed.  
Empty packaging completely.  
Triple or pressure rinse empty containers.  
Do NOT contaminate water when disposing of rinse waters.  
Do NOT re-use containers.  
Store for collection by approved waste disposal service.  
Recycle if appropriate facilities/equipment available.  
Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

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## 14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

### US DOT basic description and technical name

|| UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (acetochlor), 9, III

### Note

|| Applies ONLY to shipments in bulk or via water transportation.

### Special provisions

|| This material meets the definition of a marine pollutant.

### IMDG Code

|| Use description for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

### IATA/ICAO

|| Use description for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

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## 15. REGULATORY INFORMATION

### TSCA Inventory

All components are on the US EPA's TSCA Inventory

### OSHA Hazardous Components

Acetochlor  
Atrazine  
Furilazole (Safener)  
Surfactant(s)

### SARA Title III Rules

Section 311/312 Hazard Categories

Immediate, Delayed  
Section 302 Extremely Hazardous Substances  
Not applicable.  
Section 313 Toxic Chemical(s)  
Atrazine

**CERCLA Reportable quantity**  
Not applicable.

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## 16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.  
Follow all local/regional/national/international regulations.  
Please consult supplier if further information is needed.  
In this document the British spelling was applied.  
|| Significant changes versus previous edition.

|      | Health | Flammability | Instability | Additional Markings |
|------|--------|--------------|-------------|---------------------|
| NFPA | 2      | 1            | 1           |                     |

0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard

Endnotes:

- { a } EU label (manufacturer self-classification)
- { b } EU label (Annex I)
- { c } National classification

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

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.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

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