MONSANTO COMPANY

Safety Data Sheet
Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifier

HARNESS® Xtra 5.6L Herbicide

1.1.1. Chemical name
Not applicable.

1.1.2. Synonyms
None.

1.1.3. EPA Reg. No.
524-485

1.2. Product use
Herbicide

1.3. Company
MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167
Telephone: 800-332-3111, **Fax:** 314-694-5557
E-mail: safety.datasheet@monsanto.com

1.4. 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).

2. HAZARDS IDENTIFICATION

2.1. Classification
OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)
Acute toxicity, oral - Category 4
Skin sensitization - Category 1
Carcinogenicity - Category 2
STOT SE - Category 3, Respiratory irritant
STOT RE - Category 2

2.2. Label elements

2.2.1. Signal word
WARNING!

2.2.2. Hazard pictogram/pictograms

2.2.3. Hazard statement/statements
Harmful if swallowed.
May cause an allergic skin reaction.
May cause respiratory irritation.

Suspected of causing cancer.
May cause damage to kidney or liver through prolonged or repeated exposure.

2.2.4. Precautionary statement/statements

Do not breathe mist/vapours/spray.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/eye protection.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Rinse mouth.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Wash contaminated clothing before reuse.
Call a POISON CENTER or doctor/physician if you feel unwell.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container in accordance with local, regional, national and international regulations.

2.3. Appearance and odour (colour/form/odour)

Pink /Suspension / Slight

2.4. OSHA Status

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

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

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	33.4
Atrazine	1912-24-9	26.9
Furilazole (Safener)	121776-33-8	<=1.5
Water and minor formulating ingredients		<=39

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

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

4.1. Description of first aid measures

4.1.1. 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. Call a poison control center or doctor for treatment advice.

4.1.2. 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.

4.1.3. 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. Call a poison control center or doctor for treatment advice.

4.1.4. 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.

4.2. Most important symptoms and effects, both acute and delayed

4.2.1. Eye contact, short term: Causes moderate but temporary eye irritation.

4.2.2. Skin contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.May cause allergic skin reaction.

4.2.3. Inhalation, short term: Harmful by inhalation.

4.2.4. Single ingestion: Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

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

5.2. Special hazards

5.2.1. Unusual fire and explosion hazards

Minimise use of water to prevent environmental contamination.
Environmental precautions: see section 6.

5.2.2. Hazardous products of combustion

Carbon monoxide (CO), nitrogen oxides (NOx), hydrogen chloride (HCl)

5.3. Fire fighting equipment: Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

5.4. Flash point

Does not flash.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

Use personal protection recommended in section 8.

6.2. 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.

6.3. Methods for cleaning up

Contain spillage with sand bags or other means.
Absorb in earth, sand or absorbent material.
SMALL QUANTITIES:
Dig up heavily contaminated soil.

Flush spill area with water.
Collect in containers for disposal.
Place leaking containers in oversize leakproof drums for transport.
Flush residues with small quantities of water.
LARGE QUANTITIES:
Refer to section 7 for types of containers.

Refer to section 13 for disposal of spilled material.
Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

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

7.1. Precautions for safe handling

Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Wash contaminated clothing before re-use. Wash hands thoroughly after handling or contact. When using do not eat, drink or smoke. Do NOT taste or swallow. Thoroughly clean equipment after use. Wash outside of gloves before removing. Do not contaminate drains, sewers and water ways when disposing of equipment rinse water. Avoid prolonged or repeated contact with skin.

7.2. Conditions for safe storage

Compatible materials for storage: stainless steel, Heresite[TM]-lined steel, high-density polyethylene (HDPE), polypropylene (PP), Teflon[TM], 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 container tightly closed in a cool, well-ventilated place.
Keep only in the original container.
Use appropriate containment to avoid environmental contamination.
Minimum shelf life: 2 years.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Airborne exposure limits

Components	Exposure Guidelines
Acetochlor	No specific occupational exposure limit has been established.
Atrazine	TLV (ACGIH): 2 mg/m3 (TWA): A3: Animal carcinogen PEL (OSHA): No specific occupational exposure limit has been established.
Furilazole (Safener)	TLV (ACGIH): No specific occupational exposure limit has been established. PEL (OSHA): No specific occupational exposure limit has been established. NCEL (New Chemical Exposure Limit): 0.1 mg/m3 (TWA)
Water and minor formulating ingredients	No specific occupational exposure limit has been established.

8.2. Engineering controls: No special requirement when used as recommended.

8.3. Recommendations for personal protective equipment

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

8.3.2. Skin protection: Wear chemical resistant gloves. If there is significant potential for contact: Wear chemical resistant clothing/footwear. 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. Wear chemical resistant apron. Keep and wash personal protective equipment separately from other laundry.

8.3.3. 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.

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:	Slight
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.
Self-accelerating decomposition temperature (SADT):	No data.
Oxidizing properties:	No data.
Specific gravity:	1.11 @ 20 °C / 15.6 °C
Vapour pressure:	No significant volatility.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	250 cP @ 10 °C; Method: Haake
Kinematic viscosity:	Not applicable.
Density:	1.1100 - 1.1140 g/cm3 @ 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: 2.25 (atrazine)

10. STABILITY AND REACTIVITY

10.1. Reactivity
Corrosive to mild steel. Corrosive to aluminium.

10.2. Stability
Stable under normal conditions of handling and storage.

10.3. Possibility of hazardous reactions

Corrosive to mild steel. Corrosive to aluminium.
Hazardous polymerization: Does not occur.

10.4. Incompatible materials

unlined mild steel;aluminium;polyvinyl chloride (PVC);Contact with mild steel may cause color change and reduce product's ability to emulsify with water.;
Compatible materials for storage: see section 7.2.

10.5. Hazardous decomposition

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

11. TOXICOLOGICAL INFORMATION

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

Likely routes of exposure: Skin contact, eye contact, inhalation

Potential health effects
Eye contact, short term: Causes moderate but 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: Harmful if swallowed.

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

Similar formulation

Acute oral toxicity
Rat, LD50: 1,338 mg/kg body weight
Slightly toxic.
Acute dermal toxicity
Rat, LD50 (limit test): > 5,000 mg/kg body weight
Practically non-toxic. No mortality.
Skin irritation
Rabbit, 6 animals, OECD 404 test:
Primary Irritation Index (PII): 0.6/8.0
Slight irritation.
Eye irritation
Rabbit, 6 animals, OECD 405 test:
Days to heal: 14
Slight irritation.
Acute inhalation toxicity
Rat, , 4 hours, aerosol:
Slightly toxic. No mortality. No 4-hr LC50 at the maximum achievable concentration.
Skin sensitization
Guinea pig, 3-induction Buehler test:
Positive incidence: 80 %
Positive.

Acetochlor

Genotoxicity

Not genotoxic on the basis of weight of evidence analysis.

Carcinogenicity

Nasal and thyroid tumours in rats. Mode(s) of action not relevant to humans.
Liver tumours in rats and mice. Only above the MTD. Not relevant to humans.
Lung tumours and histiocytic sarcomas in mice. Probably not treatment related.

Reproductive/Developmental Toxicity

Reproductive effects in rats only in the presence of significant maternal toxicity.
Developmental effects in rats only in the presence of significant maternal toxicity.
No developmental effects in rabbits.
Testicular damage in dogs only in the presence of substantial systemic toxicity.

EXPERIENCE WITH HUMAN EXPOSURE

Skin contact, short term, occupational:

Skin effects: sensitization in susceptible individuals

Atrazine

Genotoxicity

Not genotoxic.

Carcinogenicity

Mammary tumours in rats. Mode(s) of action not relevant to humans.

Reproductive/Developmental Toxicity

No reproductive effects in rats.
Developmental effects in rats and rabbits only in the presence of significant maternal toxicity.

Furilazole (Safener)

Genotoxicity

Not genotoxic on the basis of weight of evidence analysis.

Carcinogenicity

Liver, testes (Leydig cell) and forestomach tumours in rats. Liver and lung tumours in mice. Only at or above MTD. Questionable relevance to humans.

Reproductive/Developmental Toxicity

No reproductive effects in rats.
No developmental effects in rabbits.
Developmental effects in rats only in the presence of maternal toxicity.

12. ECOLOGICAL INFORMATION

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

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

Similar formulation

Aquatic toxicity, algae/aquatic plants

Green algae (Selenastrum capricornutum):

Acute toxicity, 72 hours, static, EbC50 (biomass): 5.01 µg/L
Very highly toxic.

Acetochlor

Aquatic toxicity, fish
Bluegill sunfish (Lepomis macrochirus):
Acute toxicity, 96 hours, static, LC50: 1.3 mg/L
Moderately toxic.
Rainbow trout (Oncorhynchus mykiss):
Acute toxicity, 96 hours, static, LC50: 0.36 - 1.2 mg/L
Highly toxic.
Aquatic toxicity, invertebrates
Water flea (Daphnia magna):
Acute toxicity, 48 hours, static, EC50: 8.6 - 16 mg/L
Moderately toxic.
Aquatic toxicity, algae/aquatic plants
Green algae (Selenastrum capricornutum):
Acute toxicity, 96 hours, static, EC50: 0.27 - 1.49 µg/L
Very highly toxic.
Avian toxicity
Bobwhite quail (Colinus virginianus):
Acute oral toxicity, single dose, LD50: 928 - 1,560 mg/kg body weight
Mallard duck (Anas platyrhynchos):
Acute oral toxicity, single dose, LD50: > 2,000 mg/kg body weight
Practically non-toxic.
Arthropod toxicity
Honey bee (Apis mellifera):
Oral, 48 hours, LD50: > 100 µg/bee
Practically non-toxic.
Honey bee (Apis mellifera):
Contact, 48 hours, LD50: > 200 µg/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, fish
Bluegill sunfish (Lepomis macrochirus):
Acute toxicity, 96 hours, LC50: 8 mg/L
Moderately toxic.
Rainbow trout (Oncorhynchus mykiss):
Acute toxicity, 96 hours, LC50: 8.8 mg/L
Moderately toxic.
Aquatic toxicity, invertebrates
Water flea (Daphnia magna):
Acute toxicity, 48 hours, EC50: 6.9 mg/L

Moderately toxic.

Aquatic toxicity, algae/aquatic plants

Green algae (Selenastrum capricornutum):
Acute toxicity, 96 hours, static, EC50: 4 - 130 µg/L
Very highly toxic.

Duckweed (Lemna gibba):
Acute toxicity, 5 days, EC50: 170 µg/L
Highly toxic.

Avian toxicity

Bobwhite quail (Colinus virginianus):
Dietary toxicity, 5 days, LC50: > 5,000 mg/kg diet
Practically non-toxic.

Mallard duck (Anas platyrhynchos):
Dietary toxicity, 5 days, LC50: > 5,000 mg/kg diet
Practically non-toxic.

Mallard duck (Anas platyrhynchos):
Acute oral toxicity, single dose, LD50: > 2,000 mg/kg body weight
Practically non-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, fish

Rainbow trout (Oncorhynchus mykiss):
Acute toxicity, 96 hours, static, LC50: 6.2 mg/L
Moderately toxic.

Bluegill sunfish (Lepomis macrochirus):
Acute toxicity, 96 hours, static, LC50: 4.6 mg/L
Moderately toxic.

Aquatic toxicity, invertebrates

Water flea (Daphnia magna):
Acute toxicity, 48 hours, static, EC50: 26 mg/L
Slightly toxic.

Aquatic toxicity, algae/aquatic plants

Green algae (Selenastrum capricornutum):
Acute toxicity, 72 hours, static, EbC50 (biomass): 34.8 mg/L
Slightly toxic.

Avian toxicity

Bobwhite quail (Colinus virginianus):
Acute oral toxicity, single dose, LD50: > 2,000 mg/kg body weight
Practically non-toxic.

Bobwhite quail (Colinus virginianus):
Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
Practically non-toxic.

Mallard duck (Anas platyrhynchos):
Dietary toxicity, 5 days, LC50: > 5,620 mg/kg diet
Practically non-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.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product

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.

13.1.2. Container

See the individual container label for disposal information. Emptied containers retain vapour and product residue. Observe all labeled 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. Ensure packaging cannot be reused. 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.

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.

14.1. US Dept. of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 105-180)

Proper Shipping Name (Technical Name if required):	Not regulated for domestic ground transportation. ()

14.1.1. Special provisions

This material meets the definition of a marine pollutant.

14.2. IMDG Code

14.2.1. Note

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

14.3. IATA/ICAO

14.3.1. Note

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

15. REGULATORY INFORMATION

15.1. Environmental Protection Agency

15.1.1. TSCA Inventory

All components are on the US EPA's TSCA Inventory

15.1.2. SARA Title III Rules

Section 311/312 Hazard Categories: Immediate, Delayed
Section 302 Extremely Hazardous Substances: Not applicable.
Section 313 Toxic Chemical(s): Atrazine

15.1.3. CERCLA Reportable quantity

Not applicable.

15.1.4. Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.
RESTRICTED USE PESTICIDE due to ground and surface water concerns.
CAUTION!
HARMFUL IF SWALLOWED, HARMFUL IF INHALED, CAUSES MODERATE EYE IRRITATION, MAY CAUSE ALLERGIC SKIN REACTION

Acute oral toxicity: FIFRA category III.
Acute dermal toxicity: FIFRA category IV.
Acute inhalation toxicity: FIFRA category III.
Skin irritation: FIFRA category IV.
Eye irritation: FIFRA category III.

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

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.