

MONSANTO COMPANY

Safety Data Sheet Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifier

Harness® MAX Herbicide

1.1.1. Chemical name

Not applicable.

1.1.2. Synonyms

None.

1.1.3. EPA Reg. No.

524-636

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

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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

Classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)

Acute toxicity, oral - Category 4

Skin sensitization - Category 1

STOT SE - Category 3, Respiratory irritant

STOT RE - Category 2

Carcinogenicity - 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

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist/vapours/spray.
Use only outdoors or in a well-ventilated area.
In case of inadequate ventilation wear respiratory protection.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Contaminated work clothing should not be allowed out of the workplace.
If exposed or concerned:
Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Store in a well-ventilated place.
Store locked up.
Dispose of contents/container in accordance with local, regional, national and international regulations.

2.3. Other hazards

Not applicable.

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

White-Pale yellow /Liquid, Suspension, (emulsion) / Odourless

2.5. 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}
2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione; {Mesotrione}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Acetochlor	34256-82-1	39.1

Mesotrione	104206-82-8	3.7
Furilazole (Safener)	121776-33-8	<=2
Surfactant(s)		<=10
Water and minor formulating ingredients		>=45

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: Immediately flush with plenty of water. Continue for at least 15 minutes. If easy to do, remove contact lenses. If there are persistent symptoms, obtain medical advice.

4.1.2. Skin contact: Take off contaminated clothing, wristwatch, jewellery. Wash affected skin with plenty of water. Continue for at least 15 minutes. Wash clothes and clean shoes before re-use. If there are persistent symptoms, obtain medical advice.

4.1.3. Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice from a poison control center or doctor.

4.1.4. Ingestion: Rinse mouth thoroughly with water. Immediately offer water to drink. Never give anything by mouth to an unconscious person. Do NOT induce vomiting unless directed by medical personnel. If symptoms occur, get medical attention.

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

4.2.1. Eye contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

4.2.2. Skin contact, short term: May cause allergic skin reaction.

4.2.3. Inhalation, short term: May cause respiratory tract irritation.

4.2.4. Single ingestion: Harmful if swallowed.

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

4.3.1. Medical conditions aggravated by exposure: None.

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), Hydrogen chloride (HCl), Nitrogen oxides (NO_x)

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

SMALL QUANTITIES:

Flush spill area with water.

LARGE QUANTITIES:

Absorb in earth, sand or absorbent material.
Dig up heavily contaminated soil.
Collect in containers for disposal.
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.

7. HANDLING AND STORAGE

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

7.1. Precautions for safe handling

Do NOT taste or swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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.

7.2. Conditions for safe storage

Minimum storage temperature: 0 °C
Maximum storage temperature: 40 °C
Keep out of reach of children.
Keep away from food, drink and animal feed.
Keep only in the original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Airborne exposure limits

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

Mesotrione	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/m ³ (TWA)
Surfactant(s)	No specific occupational exposure limit has been established.
Water and minor formulating ingredients	No specific occupational exposure limit has been established.

8.2. Engineering controls:

Provide local exhaust ventilation. Have eye wash facilities immediately available at locations where eye contact can occur.

8.3. Recommendations for personal protective equipment

8.3.1. Eye protection:

If there is potential for contact: Wear chemical goggles.

8.3.2. Skin protection:

Wear chemical resistant gloves. If there is significant potential for contact: Wear face shield. Wear chemical resistant clothing/footwear.

8.3.3. Respiratory protection:

If airborne exposure is excessive: Wear respirator. Full facepiece/hood/helmet respirator replaces need for chemical goggles.

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:	White - Pale yellow
Odour:	Odourless
Form:	Liquid, Suspension, (emulsion)
Physical form changes (melting, boiling, etc.):	
Melting point:	No data.
Boiling point:	No data.
Flash point:	Does not flash.
Explosive properties:	No data.
Auto ignition temperature:	No data.
Self-accelerating decomposition temperature (SADT):	No data.
Oxidizing properties:	No data.
Specific gravity:	1.07
Vapour pressure:	No data.
Vapour density:	No data.

Evaporation rate:	No data.
Dynamic viscosity:	No data.
Kinematic viscosity:	No data.
Density:	1.074 g/cm ³ @ 20 °C
Solubility:	Water: Completely miscible.
pH:	2
Partition coefficient:	log Pow: 4.14 @ 20 °C (Acetochlor)
Partition coefficient:	log Pow: ~ 1.49 (Mesotrione)

10. STABILITY AND REACTIVITY

10.1. Stability

Stable under normal conditions of handling and storage.

Compatible materials for storage: see section 7.2.

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

Skin contact, short term: May cause allergic skin reaction.

Inhalation, short term: May cause respiratory tract irritation.

Single ingestion: Harmful if swallowed.

Acute oral toxicity

Rat, LD50: 1,750 mg/kg body weight

Slightly toxic.

Acute dermal toxicity

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

No mortality.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol: > 5.41 mg/L

No mortality.

Skin irritation

Rabbit, 3 animals:

Days to heal: 10

Slight irritation.

Eye irritation

Rabbit, 3 animals:

Days to heal: 1

Essentially non irritating.

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

Furilazole (Safener)

Genotoxicity

Not genotoxic on the basis of weight of evidence analysis.

Carcinogenicity

Liver tumours in rats and mice. Only at doses that caused significant hepatotoxicity. Questionable relevance to humans.
Lung tumours in mice. Only at doses that caused chronic inflammation. Questionable relevance to humans.
Testes (Leydig cell) tumours in rats. Questionable relevance to humans.
Forestomach tumours in rats. Only at doses that caused substantial irritation. Not relevant 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.

Mesotrione

Genotoxicity

Not mutagenic.

Carcinogenicity

No evidence of carcinogenicity.

Reproductive/Developmental Toxicity

No effect on reproduction.

Surfactant(s)

EXPERIENCE WITH HUMAN EXPOSURE

Skin contact, short term, :

Skin effects: irritation, redness

Eye contact, short term, :

Eye effects: irritation, eye inflammation (conjunctivitis), tearing (lachrymation)

Ingestion, short term, :

Gastro-intestinal effects: nausea/vomiting, diarrhoea

12. ECOLOGICAL INFORMATION

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

Monsanto has not conducted environmental studies on this product. Data obtained on active ingredient(s) are summarized below. The toxicity of this formulation to aquatic animals may be greater than the toxicity of the active ingredient if surfactants are present.

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

Mesotrione

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, LC50: > 114 mg/L

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, EC50: 840 mg/L

Aquatic toxicity, algae/aquatic plants

Green algae (*Pseudokirchneriella subcapitata*):

Acute toxicity, 5 days, EC50: 1.9 mg/L

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Acute oral toxicity, 14 days, LD50: > 2,000 mg/kg body weight

Hydrolysis

Stable

Dissipation

:

Not persistent in soil or water. May enter groundwater.

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. ()
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14.1.1. Note

This product in single or combination packaging with a net quantity per single or inner packaging of 5 liters or less are not regulated for transport.

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

Exempt

15.1.2. SARA Title III Rules

Section 311/312 Hazard Categories:

See OSHA Hazard Communication Standard Categories in Section 2.1

Section 302 Extremely Hazardous Substances: Not applicable.

Section 313 Toxic Chemical(s): Not applicable.

15.1.3. CERCLA Reportable quantity

Not applicable.

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

This chemical is a pesticide product regulated 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.

CAUTION!
HARMFUL IF SWALLOWED
MAY CAUSE ALLERGIC SKIN REACTION

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

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.

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), STOT SE (Specific Target Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS 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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