

Container

GROUP	2	HERBICIDE
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MIZUNA™

Water Dispersible Granular Herbicide
in water-soluble bags

AGRICULTURAL

FOR SALE FOR USE IN THE PRAIRIE PROVINCES AND
PEACE RIVER AREA OF BRITISH COLUMBIA ONLY

ACTIVE INGREDIENT: Imazamox 70% a.e.

Warning, contains the allergen sulfites

REGISTRATION NO. 32696 PEST CONTROL PRODUCTS ACT

NET CONTENTS: 470 g (4 x 117.5 g water-soluble bags)

WARNING - EYE IRRITANT

IN CASE OF EMERGENCY ENDANGERING LIFE OR PROPERTY
INVOLVING THIS PRODUCT, CALL DAY OR NIGHT
1-800-454-2673

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING
KEEP OUT OF REACH OF CHILDREN

DO NOT SELL INDIVIDUAL WATER-SOLUBLE BAGS SEPARATELY

Manufactured by:
BASF Canada Inc.
100 Milverton Drive, 5th Floor
Mississauga, ON L5R 4H1
1-877-371-2273

Distributed by:
Loveland Products Canada Inc.
789 Donnybrook Drive
Dorchester, ON N0L 1G5
1-800-328-4678

MIZUNA is a trademark of Loveland Products Canada Inc.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

DO NOT APPLY BY AIR.

Skin irritant.

WARNING - EYE IRRITANT

May cause eye damage.

Wear a long-sleeved shirt and long pants during all activities, and wear chemical-resistant gloves and goggles or face shield during mixing/loading, clean-up and repair activities.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

ENVIRONMENTAL HAZARDS

TOXIC to non-target terrestrial plants. Observe buffer zones specified under Directions For Use.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application of this product when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

FIRST AID

If swallowed: Call a poison control centre 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 a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION

Treat symptomatically.

STORAGE

Store above 5°C.

Store in a cool, dry place away from children, animals, food, feed or fertilizers.

Keep unused water-soluble bags in resealed original container.

Keep packages dry at all times.

Keep packages out of rain.

Keep from freezing.

DISPOSAL

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

Booklet

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TOXICOLOGICAL INFORMATION

Treat symptomatically.

STORAGE

Store above 5°C.

Store in a cool, dry place away from children, animals, food, feed or fertilizers.

Keep unused water-soluble bags in resealed original container.

Keep packages dry at all times.

Keep packages out of rain.

Keep from freezing.

DISPOSAL

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ENVIRONMENTAL HAZARDS

TOXIC to non-target terrestrial plants. Observe buffer zones specified under Directions For Use.

To reduce runoff from treated areas into aquatic habitats, avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application of this product when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

Clearfield Lentils¹ (lentil varieties with the Clearfield trait) and Clearfield Sunflowers¹ (sunflower varieties with the Clearfield trait)

DIRECTIONS FOR USE (Prairie Provinces and Peace River Area of British Columbia only)

MIZUNA is a selective herbicide that can be applied as an early post-emergence treatment in **Clearfield Lentils¹** and **Clearfield Sunflowers¹**.

When MIZUNA is applied early post-emergence, absorption may occur through both the roots and foliage. Susceptible weeds stop growing and eventually die.

DO NOT apply more than once per year.

DO NOT graze the treated **Clearfield Lentils¹** or cut for hay within 20 days of application.

DO NOT graze treated sunflower plants or cut for straw; sufficient data are not available to support such use.

Pre-harvest Interval: After 60 days, **Clearfield Lentils¹** can be harvested. Sunflowers can be harvested after 70 days.

Field Sprayer Application

DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

DO NOT apply by air.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

Buffer Zones

Use of the following spray methods or equipment DO NOT require a buffer zone: hand-held or backpack sprayer and spot treatment.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands).

Method of Application	Crop	Buffer zones (metres) Required for the Protection of Terrestrial Habitat
Field sprayer	All crops	1

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The spray drift buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pesticides and Pest Management portion of the Health Canada website.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

BROADLEAF WEED AND GRASS CONTROL

MIZUNA at 21 g/ha (15 g a.e./ha) will control only:	
Lamb's-quarters* Stinkweed Wild mustard	Volunteer spring wheat (non- Clearfield tolerant wheat)
MIZUNA at 29 g/ha (20 g a.e./ha) will control:	
Barnyard grass Cleavers* Cow cockle Green foxtail Green smartweed Japanese brome grass* Kochia* Lamb's-quarters Persian dandelion Redroot pigweed Round-leaved mallow* Russian thistle Shepherd's purse Stinkweed	Volunteer barley Volunteer canary seed Volunteer canola (non- Clearfield tolerant canola only) Volunteer durum wheat Volunteer spring wheat (non- Clearfield tolerant wheat) Volunteer tame oats Wild buckwheat* Wild mustard Wild oats Yellow foxtail

* = suppression only

Apply in 100 L/ha of water with MERGE® Adjuvant at a rate of 0.5% v/v (e.g. 5 L of MERGE Adjuvant per 1000 L spray solution) or MSO Concentrate at 1% v/v.

Clearfield Sunflowers¹ (sunflower varieties with the Clearfield trait)

Application should be made from the 2 to 8 leaf stage of the sunflower crop and after the weeds have emerged. To control broadleaf weeds, apply MIZUNA from the cotyledon up to the 4-leaf stage. To control grasses, apply MIZUNA from the 1 to 4-true leaf stage up until early tillering. Initial transient crop yellowing may be observed after application but this is outgrown and should not affect yield.

Apply in 100 L/ha of water with MERGE® Adjuvant at a rate of 0.5% v/v (e.g. 5 L of MERGE Adjuvant per 1000 L spray solution) or MSO Concentrate at 1% v/v.

Clearfield Lentils¹ (lentil varieties with the Clearfield trait)

Application should be made from the 2 to 6 leaf stage of the lentil crop and after the weeds have emerged. To control broadleaf weeds, apply MIZUNA from the cotyledon up to the 4-leaf stage. To control grasses, apply MIZUNA from the 1 to 4-true leaf stage up until early tillering.

MIXING INSTRUCTIONS

1. Use 100 L/ha of water.
2. Use a 50-mesh (or coarser) filter screen.
3. Fill the spray tank with three-quarters of the required amount of clean water, start agitation and continue agitation throughout the entire mixing and spraying procedure.
4. Add the required amount of MIZUNA soluble bag(s) directly into the sprayer through the tank opening.
5. Agitate for at least ten minutes to dissolve the herbicide. After the herbicide is dissolved, continue agitation.
6. If required, add the required amount of MERGE Adjuvant or MSO Concentrate. If excess foaming occurs, a silicone anti-foaming agent may be added (e.g. HALT®).
7. Complete filling the tank to the desired level with water. If agitation is stopped for more than 5 minutes, re-suspend spray solution by full agitation prior to commencing spraying again.
8. Between loads of MIZUNA, check in-line and nozzle screens and rinse clean if necessary.
9. Upon completion of spraying MIZUNA, thoroughly flush tank, boom, hoses and in-line and nozzle screens with clean water to avoid possible injury to other crops.

FOLLOW CROPPING

Winter wheat can be planted 3 months after treatment (3 MAT) as a rotational crop.

Initial crop injury to non-**Clearfield** canola may be observed. Avoid spray overlap as yield reduction may result. The following crops may be grown safely the year following an application:

Canary seed

Field corn

Field peas

Clearfield Canola¹ (canola varieties with the **Clearfield** trait)

Non-**Clearfield** canola

Lentils

Spring wheat

Durum wheat

Spring barley

Sunflower

Tame oats

Flax

Chickpeas

Clearfield Sunflowers¹ (sunflower varieties with the **Clearfield** trait)

The following crop may be grown safely two years following an application:

Mustard (condiment type only)

There are insufficient data for other follow crops. Conduct a field bioassay (a test strip grown to maturity) the year before growing any crop other than those listed above.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, MIZUNA is a Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to MIZUNA and other Group 2 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of MIZUNA or other Group 2 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

- For further information or to report suspected resistance, contact BASF at 1-877-371-2273 or at www.agsolutions.ca.

Clearfield is a registered trade-mark of BASF Agrochemical Products B.V., used with permission by BASF Canada Inc.

MERGE is a registered trade-mark of BASF Canada Inc.

®All other products listed are registered trademarks of their respective companies.

¹ *Methods of growing plants which are resistant to certain acetohydroxyacid synthase (AHAS) herbicides are protected by Canadian Patent No. 1341465. Other applicable patents include Canadian Patent Application No. 2447445. The use of this product in the practice of patented methods could constitute patent infringement. Further information can be obtained by contacting BASF Canada at 1-877-371-2273.*

Pouch Label

MIZUNA

70% Water Dispersible Granular Herbicide

AGRICULTURAL

NET CONTENTS: 117.5 g

ACTIVE INGREDIENT: Imazamox ... 70%
active (a.e.)

Warning, contains the allergen sulfites

WARNING - EYE IRRITANT

KEEP OUT OF REACH OF CHILDREN

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL DAY OR NIGHT 1-800-561-8273 or CHEMTREC – DAY OR NIGHT 1 800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 PRODUCT IDENTIFIER:

TRADE NAME: MIZUNA™

1.2 RECOMMENDED USE: GROUP 2 HERBICIDE

1.3 DISTRIBUTED BY:

LOVELAND PRODUCTS CANADA, INC.
789 DONNYBROOK DRIVE • Dorchester, Ontario N0L 1G5

1.4 24 Hour Emergency Phone: (Chemtrec): 1-800-424-9300 (Toll Free) - **Additional Emergency Phone** 1-800-561-8273
Loveland Technical Service: 1-800-328-4678

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Skin Corrosion/Irritation	Category 2	H315
Eye Damage/Irritation	Category 2B	H320

2.2 Label elements



Signal word: WARNING
Hazard Statement: H315 – Causes skin irritation.
H320 – Causes eye irritation.

Precautionary Statement: P264 – Wash thoroughly after handling.
(Prevention): P280 – Wear protective gloves / eye protection / face protection.

Precautionary Statement: P302+P352 – IF ON SKIN: Wash with plenty of water/shower.
(Response): P321 – Specific treatment (see First Aid on the label).
P332+P313 – If skin irritation occurs: Get medical advice/attention.
P362 – Take off contaminated clothing and wash before reuse.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+P313 – If eye irritation persists: Get medical advice/attention.

Precautionary Statement: (Storage): Not applicable.
Precautionary Statement: (Disposal): Not applicable.

2.3 Other hazards
None known

3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Chemical Name:	CAS No.	Concentration [% acid equivalent]
Imazamox	114311-32-9	70.00 a.e.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur. Remove contaminated clothing.

- If swallowed:** Call a poison control centre 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 control centre or doctor. Do not give anything by mouth to an unconscious person.
- If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
- If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control centre or doctor for further treatment advice.
- If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Eyes: Causes eye irritation. May cause eye damage.
Skin: Causes skin irritation.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-800-561-8273

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

NOTES TO PHYSICIAN: There is no specific antidote; treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Use medium appropriate to surrounding fire. Dry chemical, alcohol foam, foam, water spray or fog.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: Thermal decomposition will generate toxic and/or hazardous vapours.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.



SAFETY DATA SHEET

SDS NUMBER: 32696-18-LPI

SDS REVISIONS: NEW

DATE OF ISSUE: 09/21/18

MIZUNA™ PCP 32696

SUPERSEDES: NEW

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid dust formation. Ensure adequate ventilation. Wear suitable protective clothing. Avoid contact with skin, eyes and clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: Do not discharge into the soil/subsoil. Do not discharge into drains, surface waters or groundwater.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Avoid raising dust. Sweep/shovel up. 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

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Store above 5 °C. Do not store above 40 °C
Store in a cool, dry place away from children, animals, food, feed or fertilizers. Keep unused water-soluble bags in resealed original container. Keep packages dry at all times. Keep packages out of rain. Keep from freezing.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS: OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
Not listed		

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
Not listed		

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:

Engineering Measures

Observe Occupational Exposure Limits and minimize the risk of inhalation of vapours and spray mists. Provide eyewash station and safety shower.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Long-sleeved shirt and long pants. Chemical-resistant gloves, such as polyethylene or polyvinylchloride. Shoes plus socks.

Respiratory Protection: Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE :	Granules
ODOUR:	Odourless.
ODOUR THRESHOLD:	Not applicable.
COLOUR:	Light tan.
pH:	2 - 4
MELTING POINT / FREEZING POINT:	No data available
BOILING POINT:	No data available.
FLASH POINT:	No data available.
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOUR PRESSURE:	Negligible.
SOLUBILITY:	Dispersible.
PARTITION CO-EFFICIENT, n-OCTANOL / WATER:	No data available.
AUTO-IGNITION TEMPERATURE:	Not self-igniting.
DECOMPOSITION TEMPERATURE:	No data available.
VISCOSITY: (kinematic):	No data available
SPECIFIC GRAVITY (Water = 1):	0.567 g/ml
DENSITY:	567 kg/m ³

Note: 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 specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No data available. Will not polymerize.

10.4 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. This product may form an explosive mixture if: 1. the dust is suspended in the atmosphere as a dust cloud, and 2. the concentration of the dust is above the lower explosion limit (LEL) and 3. the limiting oxygen concentration (LOC) is exceeded.

10.5 INCOMPATIBLE MATERIALS

Strong acids, strong bases, strong oxidizing agents.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition will generate oxides of carbon, oxides of nitrogen, hydrocarbons, irritating and possibly toxic and/or hazardous vapours.

11 TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE

Eye contact. Harmful if swallowed. Harmful if inhaled. Skin contact.

LC₅₀ (rat): No data available.**LD₅₀ Oral (rat):** > 5000 mg/kg**LD₅₀ Dermal (rat):** > 4000 mg/kg**Acute Toxicity Estimates:** No data available**Skin Irritation (rabbit):** Non-irritant.**Eye Irritation (rabbit):** Non-irritant.**Specific Target Organ Toxicity:** No data available.**Aspiration:** No data available**Skin Sensitization (guinea pig):** Not a sensitizer**Carcinogenicity:** Not listed.**Germ Cell Mutagenicity:** No data available**Interactive Effects:** None known



SAFETY DATA SHEET

SDS NUMBER: 32696-18-LPI

SDS REVISIONS: NEW

DATE OF ISSUE: 09/21/18

MIZUNA™ PCP 32696

SUPERSEDES: NEW

12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY

The product is not toxic to aquatic invertebrates but is very toxic (acute effect) to aquatic plants. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Ecotoxicological Data

	Species	Test Results
Imazamox	Lepomis macrochirus	> 119 mg/L – 96-hour LC ₅₀
	Daphnia magna	> 100 mg/L – 48-hour EC ₅₀

Drift or runoff may adversely affect non-target plants.
 Do not apply directly to water.
 Do not contaminate water when disposing of equipment wash water.
 Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: No data available.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Does not bioaccumulate.

12.4 MOBILITY IN SOIL

Expected to be insignificant.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

When all the water-soluble bags are used, make the empty outer package unsuitable for further use. Dispose of the outer package in accordance with provincial requirements. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

TDG Shipping Description: NOT REGULATED

15 REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:

NFPA		HMIS
0 Health	0 Least	0 Health
0 Flammability	1 Slight	0 Flammability
0 Instability	2 Moderate	0 Reactivity
	3 High	H PPE
	4 Severe	

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:

Immediate	<u>Y</u>	Fire	<u>N</u>	Sudden Release of Pressure	<u>N</u>
Delayed	<u>N</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Not listed.
 SARA, Title III, Section 313: Not listed.
 RCRA Waste Code: Not listed
 CA Proposition 65: Not applicable.



SAFETY DATA SHEET

SDS NUMBER: 32696-18-LPI

SDS REVISIONS: NEW

DATE OF ISSUE: 09/21/18

MIZUNA™ PCP 32696

SUPERSEDES: NEW

16 OTHER INFORMATION

SDS STATUS: New.

PREPARED BY: Product Stewardship and Regulatory Affairs

REVIEWED BY: Safety, Health and Environment

PEST CONTROL PRODUCTS ACT REG. NO.: 32696

WHMIS does not apply to this product.

™Mizuna is a trademark of Loveland Products Canada, Inc.

Disclaimer and Limitation of Liability: This data sheet was developed from information on the constituent materials identified herein and does not relate to the use of such materials in combination with any other material or process. No warranty is expressed or implied with respect to the completeness or ongoing accuracy of the information contained in this data sheet, and LOVELAND PRODUCTS CANADA, INC. disclaims all liability for reliance on such information. This data sheet is not a guarantee of safety. Users are responsible for ensuring that they have all current information necessary to safely use the product described by this data sheet for their specific purpose.

Container

GROUP	2	HERBICIDE
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MIZUNA™

Water Dispersible Granular Herbicide
in water-soluble bags

AGRICULTURAL

FOR SALE FOR USE IN THE PRAIRIE PROVINCES AND
PEACE RIVER AREA OF BRITISH COLUMBIA ONLY

ACTIVE INGREDIENT: Imazamox 70% a.e.

Warning, contains the allergen sulfites

REGISTRATION NO. 32696 PEST CONTROL PRODUCTS ACT

NET CONTENTS: 470 g (4 x 117.5 g water-soluble bags)

WARNING - EYE IRRITANT

IN CASE OF EMERGENCY ENDANGERING LIFE OR PROPERTY
INVOLVING THIS PRODUCT, CALL DAY OR NIGHT
1-800-454-2673

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING
KEEP OUT OF REACH OF CHILDREN

DO NOT SELL INDIVIDUAL WATER-SOLUBLE BAGS SEPARATELY

Manufactured by:
BASF Canada Inc.
100 Milverton Drive, 5th Floor
Mississauga, ON L5R 4H1
1-877-371-2273

Distributed by:
Loveland Products Canada Inc.
789 Donnybrook Drive
Dorchester, ON N0L 1G5
1-800-328-4678

MIZUNA is a trademark of Loveland Products Canada Inc.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN.

DO NOT APPLY BY AIR.

Skin irritant.

WARNING - EYE IRRITANT

May cause eye damage.

Wear a long-sleeved shirt and long pants during all activities, and wear chemical-resistant gloves and goggles or face shield during mixing/loading, clean-up and repair activities.

DO NOT enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Apply only when the potential for drift to areas of human habitation or areas of human activity such as houses, cottages, schools and recreational areas is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment and sprayer settings.

ENVIRONMENTAL HAZARDS

TOXIC to non-target terrestrial plants. Observe buffer zones specified under Directions For Use.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil, or clay.

Avoid application of this product when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

FIRST AID

If swallowed: Call a poison control centre 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 a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

TOXICOLOGICAL INFORMATION

Treat symptomatically.

STORAGE

Store above 5°C.

Store in a cool, dry place away from children, animals, food, feed or fertilizers.

Keep unused water-soluble bags in resealed original container.

Keep packages dry at all times.

Keep packages out of rain.

Keep from freezing.

DISPOSAL

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instruction for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

NOTICE TO USER

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the *Pest Control Products Act* to use this product in a way that is inconsistent with the directions on the label.

Booklet

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Avoid application of this product when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

Clearfield Lentils¹ (lentil varieties with the Clearfield trait) and Clearfield Sunflowers¹ (sunflower varieties with the Clearfield trait)

DIRECTIONS FOR USE (Prairie Provinces and Peace River Area of British Columbia only)

MIZUNA is a selective herbicide that can be applied as an early post-emergence treatment in **Clearfield Lentils¹** and **Clearfield Sunflowers¹**.

When MIZUNA is applied early post-emergence, absorption may occur through both the roots and foliage. Susceptible weeds stop growing and eventually die.

DO NOT apply more than once per year.

DO NOT graze the treated **Clearfield Lentils¹** or cut for hay within 20 days of application.

DO NOT graze treated sunflower plants or cut for straw; sufficient data are not available to support such use.

Pre-harvest Interval: After 60 days, **Clearfield Lentils¹** can be harvested. Sunflowers can be harvested after 70 days.

Field Sprayer Application

DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

DO NOT apply by air.

As this product is not registered for the control of pests in aquatic systems, DO NOT use to control aquatic pests.

Buffer Zones

Use of the following spray methods or equipment DO NOT require a buffer zone: hand-held or backpack sprayer and spot treatment.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands).

Method of Application	Crop	Buffer zones (metres) Required for the Protection of Terrestrial Habitat
Field sprayer	All crops	1

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

The spray drift buffer zones for this product can be modified based on weather conditions and spray equipment configuration by accessing the Buffer Zone Calculator on the Pesticides and Pest Management portion of the Health Canada website.

DO NOT contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

BROADLEAF WEED AND GRASS CONTROL

MIZUNA at 21 g/ha (15 g a.e./ha) will control only:	
Lamb's-quarters* Stinkweed Wild mustard	Volunteer spring wheat (non- Clearfield tolerant wheat)
MIZUNA at 29 g/ha (20 g a.e./ha) will control:	
Barnyard grass Cleavers* Cow cockle Green foxtail Green smartweed Japanese brome grass* Kochia* Lamb's-quarters Persian dandel Redroot pigweed Round-leaved mallow* Russian thistle Shepherd's purse Stinkweed	Volunteer barley Volunteer canary seed Volunteer canola (non- Clearfield tolerant canola only) Volunteer durum wheat Volunteer spring wheat (non- Clearfield tolerant wheat) Volunteer tame oats Wild buckwheat* Wild mustard Wild oats Yellow foxtail

* = suppression only

Apply in 100 L/ha of water with MERGE® Adjuvant at a rate of 0.5% v/v (e.g. 5 L of MERGE Adjuvant per 1000 L spray solution) or MSO Concentrate at 1% v/v.

Clearfield Sunflowers¹ (sunflower varieties with the Clearfield trait)

Application should be made from the 2 to 8 leaf stage of the sunflower crop and after the weeds have emerged. To control broadleaf weeds, apply MIZUNA from the cotyledon up to the 4-leaf stage. To control grasses, apply MIZUNA from the 1 to 4-true leaf stage up until early tillering. Initial transient crop yellowing may be observed after application but this is outgrown and should not affect yield.

Apply in 100 L/ha of water with MERGE® Adjuvant at a rate of 0.5% v/v (e.g. 5 L of MERGE Adjuvant per 1000 L spray solution) or MSO Concentrate at 1% v/v.

Clearfield Lentils¹ (lentil varieties with the Clearfield trait)

Application should be made from the 2 to 6 leaf stage of the lentil crop and after the weeds have emerged. To control broadleaf weeds, apply MIZUNA from the cotyledon up to the 4-leaf stage. To control grasses, apply MIZUNA from the 1 to 4-true leaf stage up until early tillering.

MIXING INSTRUCTIONS

1. Use 100 L/ha of water.
2. Use a 50-mesh (or coarser) filter screen.
3. Fill the spray tank with three-quarters of the required amount of clean water, start agitation and continue agitation throughout the entire mixing and spraying procedure.
4. Add the required amount of MIZUNA soluble bag(s) directly into the sprayer through the tank opening.
5. Agitate for at least ten minutes to dissolve the herbicide. After the herbicide is dissolved, continue agitation.
6. If required, add the required amount of MERGE Adjuvant or MSO Concentrate. If excess foaming occurs, a silicone anti-foaming agent may be added (e.g. HALT®).
7. Complete filling the tank to the desired level with water. If agitation is stopped for more than 5 minutes, re-suspend spray solution by full agitation prior to commencing spraying again.
8. Between loads of MIZUNA, check in-line and nozzle screens and rinse clean if necessary.
9. Upon completion of spraying MIZUNA, thoroughly flush tank, boom, hoses and in-line and nozzle screens with clean water to avoid possible injury to other crops.

FOLLOW CROPPING

Winter wheat can be planted 3 months after treatment (3 MAT) as a rotational crop.

Initial crop injury to non-**Clearfield** canola may be observed. Avoid spray overlap as yield reduction may result. The following crops may be grown safely the year following an application:

Canary seed

Field corn

Field peas

Clearfield Canola¹ (canola varieties with the **Clearfield** trait)

Non-**Clearfield** canola

Lentils

Spring wheat

Durum wheat

Spring barley

Sunflower

Tame oats

Flax

Chickpeas

Clearfield Sunflowers¹ (sunflower varieties with the **Clearfield** trait)

The following crop may be grown safely two years following an application:

Mustard (condiment type only)

There are insufficient data for other follow crops. Conduct a field bioassay (a test strip grown to maturity) the year before growing any crop other than those listed above.

RESISTANCE MANAGEMENT RECOMMENDATIONS

For resistance management, MIZUNA is a Group 2 herbicide. Any weed population may contain or develop plants naturally resistant to MIZUNA and other Group 2 herbicides. The resistant biotypes may dominate the weed population if these herbicides are used repeatedly in the same field. Other resistance mechanisms that are not linked to site of action, but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay herbicide resistance:

- Where possible, rotate the use of MIZUNA or other Group 2 herbicides within a growing season (sequence) or among growing seasons with different herbicide groups that control the same weeds in a field.
- Use tank mixtures with herbicides from a different group when such use is permitted. To delay resistance, the less resistance-prone partner should control the target weed(s) as effectively as the more resistance-prone partner.
- Herbicide use should be based on an integrated weed management program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical control methods), cultural (for example, higher crop seeding rates; precision fertilizer application method and timing to favour the crop and not the weeds), biological (weed-competitive crops or varieties) and other management practices.
- Monitor weed populations after herbicide application for signs of resistance development (for example, only one weed species on the herbicide label not controlled). If resistance is suspected, prevent weed seed production in the affected area if possible by an alternative herbicide from a different group. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields, and planting clean seed.
- Have suspected resistant weed seeds tested by a qualified laboratory to confirm resistance and identify alternative herbicide options.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or integrated weed-management recommendations for specific crops and weed biotypes.

- For further information or to report suspected resistance, contact BASF at 1-877-371-2273 or at www.agsolutions.ca.

Clearfield is a registered trade-mark of BASF Agrochemical Products B.V., used with permission by BASF Canada Inc.

MERGE is a registered trade-mark of BASF Canada Inc.

®All other products listed are registered trademarks of their respective companies.

¹ *Methods of growing plants which are resistant to certain acetohydroxyacid synthase (AHAS) herbicides are protected by Canadian Patent No. 1341465. Other applicable patents include Canadian Patent Application No. 2447445. The use of this product in the practice of patented methods could constitute patent infringement. Further information can be obtained by contacting BASF Canada at 1-877-371-2273.*

Pouch Label

MIZUNA

70% Water Dispersible Granular Herbicide

AGRICULTURAL

NET CONTENTS: 117.5 g

ACTIVE INGREDIENT: Imazamox ... 70%
active (a.e.)

Warning, contains the allergen sulfites

WARNING - EYE IRRITANT

KEEP OUT OF REACH OF CHILDREN