

# Marengo<sup>®</sup> Herbicide

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| GROUP | 1 | HERBICIDE |
|-------|---|-----------|

A SUSPENSION CONCENTRATE HERBICIDE FOR POST EMERGENCE CONTROL OF ANNUAL GRASSES IN SMALL GRAIN CEREALS FOR SALE FOR USE IN THE PRAIRIE PROVINCES AND PEACE RIVER, OKANAGAN AND CRESTON FLATS REGIONS OF BRITISH COLUMBIA ONLY.

AGRICULTURAL

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

GUARANTEE: Tralkoxydim .....400 grams per litre  
Contains 1,2-benzisothiazolin-3-one at 0.025 % as a preservative.

REGISTRATION NO. 29289 PEST CONTROL PRODUCTS ACT

**CAUTION: SKIN AND EYE IRRITANT**

NET CONTENTS: 4 L - bulk

**Viterra Inc.**  
2625 Victoria Avenue  
Regina, SK S4T 7T9  
For information: 1-866-569-4411  
In case of emergency call: 1-877-943-2876

**Dow AgroSciences Canada Inc.**  
Suite 2100, 450 1 Street SW  
Calgary, AB T2P 5H1

®Marengo is a registered trademark of Viterra Inc.

## **PRECAUTIONS**

### **KEEP OUT OF REACH OF CHILDREN.**

Harmful if swallowed. May cause skin and eye irritation. Do not get on skin or in eyes. Do not wear contact lenses when using chemicals. **DO NOT** ingest. **DO NOT** get on skin, clothing, or in eyes. Contact with eyes may be painful. Do not smoke, eat, or drink while using this product.

Wear chemically resistant gloves (nitrile), safety goggles, boots and coveralls when mixing, loading, and during clean up or when adjusting or repairing sprayer. Wash gloves thoroughly with water before removing them during any operation.

Wash hands thoroughly with soap and water after using the product and before eating, drinking or smoking.

Do not contaminate food, water supplies or animal feed.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at [www.croplife.ca](http://www.croplife.ca).

## **FIRST AID**

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

**IN CASE OF POISONING**, contact a physician or a poison control centre **IMMEDIATELY**.

**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 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.

## **TOXICOLOGICAL INFORMATION**

Treat symptomatically for ingestion and/or skin and eye contact. Symptoms are likely to be those of CNS depression. Avoid respiratory depressants unless otherwise indicated.

## **ENVIRONMENTAL HAZARDS**

**When applied by ground**, do not apply within 15 m of non crop areas. **When applied by air**, do not apply within 50 m of non crop areas. Non crop areas include, fish-bearing waters, wetlands (potholes, sloughs etc.) and wildlife habitat (hedgerows, rights-of-way etc.). Avoid drift onto other crops and non-target areas.

For tank-mixes, consult the label(s) of the tank mix partner(s) and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

## **STORAGE**

Store in a cool, dry place, away from children, animals, food, feed or fertilizers. Keep unused product in resealed original container. Store above  $-5^{\circ}\text{C}$ . Shake well before use.

## **SPILL CLEANUP**

Wear appropriate protective equipment (gloves, glasses, apron) when attempting to clean up the spill. If the container is leaking, secure leak and place the container into a drum or heavy gauge plastic bag. Contact Vittera Inc. for further information.

For spills and leaks - contain the liquid with dikes of inert material (soil, clay, kitty litter etc.). Absorb the spill onto inert material and shovel into a sealable waste container.

On hard surfaces - sprinkle spill area with detergent and scrub in a small quantity of water with a coarse broom. Let stand 10 minutes then absorb onto an inert material and shovel into the waste container.

On soil - remove the top 15 cm of soil in the spill area and replace with fresh soil. Dispose of all waste including scrub brush in accordance with provincial requirements. Contact the manufacturer and the provincial regulatory agency in case of a spill and for clean-up of spills.

## **DISPOSAL**

### **Recyclable Containers:**

Do not reuse this container for any purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

### **Refillable Containers**

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. Do not reuse this container for any other purpose.

### **Disposal of unused, unwanted product:**

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.

## **PRODUCT INFORMATION**

Marengo Herbicide is a systemic, postemergence herbicide for the selective control of wild oats, volunteer tame oats, green foxtail, yellow foxtail, barnyard grass and Persian Darnel in spring wheat, durum wheat, winter wheat, barley, triticale, spring rye and winter rye.

## **DIRECTIONS FOR USE**

### **Rates of Use**

Apply Marengo Herbicide at 0.5 L/ha in 50-100 L/ha of water.

**Note:** Always add Turbocharge® Adjuvant to the spray solution at a rate of 0.5 L per 100 L of water (0.5% v/v). The incorrect Turbocharge Adjuvant rate can result in unacceptable weed control or crop injury. See MIXING and SPRAYING INSTRUCTION sections.

Marengo Herbicide can be used on the following crops:

**CEREAL CROPS:** (Spring Wheat, Durum Wheat, Winter Wheat, Barley, Triticale, Spring Rye and Winter Rye) Marengo Herbicide can be used in all varieties of spring wheat (including Canada Western red spring, amber durum, soft white spring, extra strong and Canada prairie spring), red winter wheat, all 2 or 6 row varieties of barley (malting and feed varieties), all varieties of triticale, spring rye and winter rye.

**Note:** Tillered cereal crops may incur injury if applications are made within 48 hours of freezing temperatures. Non-tillering cereal crops which are exposed to temperatures of 4°C or less up to 48 hours before or after application may incur injury. Tank mixing Marengo Herbicide with a broadleaf weed herbicide under adverse conditions may increase severity of crop injury. Crops under stress from foliar diseases or low fertility are more susceptible to injury from Marengo Herbicide.

**Do not use in tame oat crops. Avoid drift onto tame oat and corn crops.  
Do not replant treated areas to tame oats or corn for at least 4 weeks after application.**

**Minimum Interval to Harvest**

Immature cereal crops may be grazed or cut for hay 16 days after treatment. Grain may be harvested 60 days after treatment. Mature straw may be fed to livestock. Do not feed or graze underseeded forage crops in the year of treatment, sufficient data are not available to support this use.

**CEREAL CROPS UNDERSEEDED TO FORAGE LEGUMES:** alfalfa, birdsfoot trefoil, sainfoin and clovers.

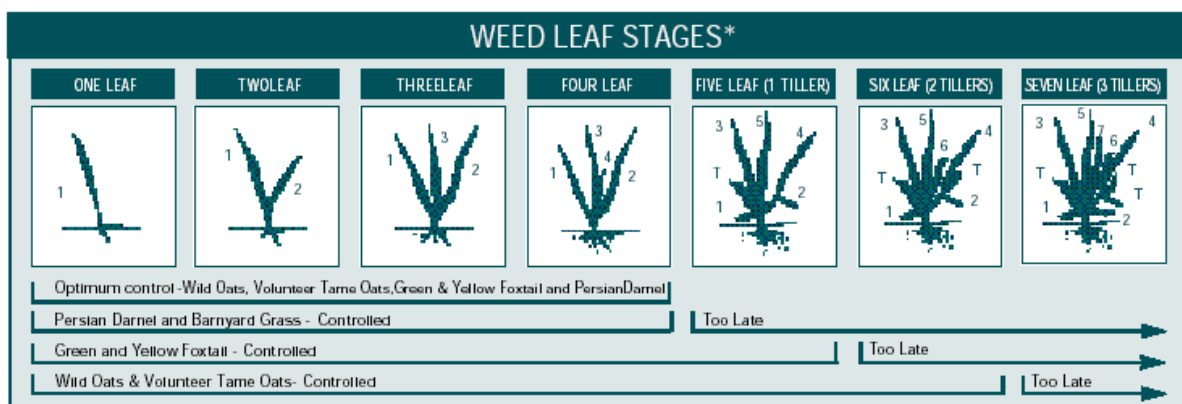
**Note:** Do not tank-mix Marengo Herbicide with any broadleaf herbicides when applying to cereal crops underseeded to forage legumes, as the forages may be injured or killed.

**WEEDS CONTROLLED**

Apply Marengo Herbicide to actively growing weeds for best results. Weeds emerging after application of Marengo Herbicide will not be controlled.

| <b>CROP</b>                                  | <b>WEEDS CONTROLLED</b>          | <b>WEED GROWTH STAGE (ZADOKS or BBCH)</b> |
|--|----------------------------------|---|
| WHEAT<br>DURUM<br>BARLEY<br>TRITICALE<br>RYE | WILD OATS, VOLUNTEER OATS        | 1-6 leaf<br>(11,20 to 14,22)              |
|  | GREEN FOXTAIL, YELLOW FOXTAIL    | 1-5 leaf<br>(11,20 to 14,21)              |
|  | BARNYARD GRASS<br>PERSIAN DARNEL | 1-4 leaf<br>(11 to 14)                    |

Optimum weed control and crop yield response occurs when grassy weeds are removed before they begin to tiller. Refer to the illustration.



### Weed Control Notes

- Perennial grasses such as quack grass will not be controlled.
- Susceptible grassy weeds treated with Marengo Herbicide cease growth soon after application, however, complete die-back of the weeds could take up to 2 weeks.
- When grass weeds are stressed due to drought, heat, lack of fertility, flooding or prolonged cool temperatures, control can be reduced or delayed since the grasses are not actively growing. Grass escapes or re-tillering may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if application of Marengo Herbicide is delayed until the stress conditions have ended and weeds are once again actively growing.
- The herbicidal activity of Marengo Herbicide can be negatively affected if water containing high concentrations (>400 ppm) of bicarbonate ions is used as a diluent. Water from deep wells is more likely to contain high concentrations of bicarbonate ions. Ammonium sulfate at 9 to 18 kg per 1000 litres of spray solution, can be used to counteract this antagonistic effect. Use only granular or liquid ammonium sulfate formulations which do not contain additional wetters or surfactants.
- Marengo Herbicide is not affected by rain falling one hour or more after application.

### TANK MIXES OF MARENGO HERBICIDE WITH BROADLEAF WEED HERBICIDES

Marengo Herbicide alone will not control broadleaf weeds. For broad spectrum control of both annual grasses and broadleaf weeds, Marengo Herbicide can be tank mixed with a variety of broadleaf weed herbicides. Refer to the following table for details and additional guidance. Read the appropriate broadleaf herbicide label for information on broadleaf weeds controlled.

### Tank Mixing Notes

- Read and strictly adhere to the use directions and precautions on the label of the product(s) that is/are being tank mixed with Marengo Herbicide. Also note all environmental restrictions and guidance such as rain fastness and maximum spraying temperatures on the label of the other product(s) being tank mixed.
- **Do not tank mix with amine formulations of 2,4-D or with amine formulations of MCPA or with any other herbicide, insecticide, fungicide, fertilizer solution or adjuvant not recommended on the label as poor grass control and/or unacceptable crop injury may result.**
- With reduced water volumes, tank mixes with Buctril M, Thumper or Pardner may result in some initial injury in the form of "tip burn". This injury, however, will not have any adverse effect on crop maturity or yield.
- Do not tank mix Marengo Herbicide with broadleaf herbicides when applying to cereal crops underseeded to forage legumes as the forages may be injured or killed.

- Tank mixes with Attain™ Herbicide Tank-Mix or Prestige™ Herbicide Tank-Mix may cause temporary crop injury if applied before the 4-leaf stage, however, yield will not normally be affected. These tank mixes may provide a lower level of wild oat control than Marengo Herbicide alone.
- Temporary crop injury may occur with registered tank mixes, in particular 2,4-D Ester/dichlorprop products, under extreme weather conditions or when the crop is suffering from stress due to inadequate or abnormally high moisture levels, or extreme temperatures. Barley may be injured with tank mixes of 2,4-D Ester/dichlorprop and Buctril M plus MCPA.
- Herbicides not listed on this label for tank mixing with Marengo Herbicide may be applied separately in sequence. Always apply Marengo Herbicide first and allow at least 7 days after the application of Marengo Herbicide before applying the other herbicide. Herbicides labelled for tank mixing with Marengo Herbicide may also be applied sequentially, either before or after application of Marengo Herbicide.

#### **TANK MIXES OF MARENGO HERBICIDE TANK-MIX WITH INSECTICIDE**

Marengo Herbicide alone or in combination with Buctril M or Pardner can be tank mixed with Decis Flowable for one pass weed and insect control. Always add Matador 120EC Emulsifiable Concentrate Insecticide or Decis Flowable to the spray tank after the herbicides but before adding Turbocharge Adjuvant.

| <b>FOR ALL TANK MIXES, USE 0.5 LITRES MARENGO HERBICIDE PER HECTARE, PLUS THE FOLLOWING:</b> |   |
|--|---|
| <b>MIXING PARTNER</b>  | <b>REMARKS</b>  |
| Buctril M  | Additional MCPA Ester may be added to this tank mix to improve control of certain broadleaf weeds (i.e. hemp nettle, volunteer canola). Refer to the Buctril M label for recommended MCPA Ester rates. A reduction in control of green foxtail may occur with the tank-mix of Buctril M and additional MCPA Ester. Maximum rate of Buctril M of 1 L/ha.                           |
| Attain™ Herbicide Tank-Mix   | Do not apply prior to the 4 leaf stage of the crop as temporary crop injury could occur, particularly in spray overlaps. Attain A 0.45-0.6 L/ha + Attain B 0.75-1.0 L/ha rates.   |
| Pardner  | Maximum rate of 1 L/ha  |
| Thumper  | Maximum rate of 1 L/ha  |
| Dichlorprop/ 2,4-D Ester   | Maximum rate of 1.75 L/ha (assuming 600 g dichlorprop/2,4-D Ester ai/L). To ensure optimum crop safety, do not apply prior to the 4 leaf stage of the crop as per the dichlorprop/2,4-D Ester label timing.   |
| 2,4-D Ester  | Maximum rate of 0.9 L/ha (assuming 600 g 2,4-D ai/L). Do not apply prior to the 4 leaf stage of the crop as temporary crop injury could occur, particularly in spray overlaps.  |
| MCPA Ester   | Maximum rate of 1.12 L/ha (assuming 500 g MCPA ai/L).   |
| Lontrel™ Herbicide + MCPA Ester  | Maximum rate of 0.28 L/ha + 1.12 L/ha (assuming 500 g MCPA ai/L). Apply between 3 leaf expanded to before flag leaf of the crop. DO NOT apply after 6 leaf stage of the crop.   |
| Curtail™ M Herbicide   | Apply between 3 leaf expanded to before flag leaf of the crop. DO NOT apply after 6 leaf stage of the crop. Rate range of 1.5-2 L/ha.   |
| Prestige™ Herbicide Tank-Mix   | For use on spring barley, durum wheat and spring wheat only. Apply postemergence when weeds are in the seedling stage (2- to 4-leaf) and when spring wheat and spring barley are in the 3-leaf to just before the flag-leaf emergence stage. Do not apply later than the flag-leaf emergence stage. Prestige A 0.6-0.8 L/ha + Prestige B 1.5-2.0 L/ha rates. DO NOT APPLY BY AIR. |

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| Decis Flowable Insecticide                          | Maximum rate of 120 mL/ha.   |
| Trophy Herbicide Tank-Mix                           | Apply post-emergence when weeds are in the seedling stage (2-4 leaf) and when spring wheat, durum wheat and spring barley are in the 3-leaf to flag-leaf stage. Do not apply later than the flag-leaf stage. Trophy A Emulsifiable Concentrate Herbicide 0.6 L/ha + Trophy B Emulsifiable Concentrate Herbicide 1.12 L/ha rates. DO NOT APPLY BY AIR   |
| Matador® 120EC Emulsifiable Concentrate Insecticide | Apply 63-83 mL/ha for control of grasshoppers.   |
| Starane™ Herbicide                                  | Apply 0.4 L/ha for control of cleavers (1-4 whorls). Apply 0.6 L/ha for control of cleavers (1-4 whorls), kochia (2-8 leaf), volunteer flax (1-12 cm) and suppression of stork's bill (1-8 leaf). Apply 0.8 L/ha for control/suppression of aforementioned weeds plus control of round-leaved mallow (1-6 leaf), and suppression of chickweed (up to 8 cm), hempnettle (2-6 leaf) and wild buckwheat (1-4 leaf). |

### MIXING INSTRUCTIONS

Follow the mixing instructions below for adding Marengo Herbicide to the spray tank.

1. Only use sprayers in good running condition with high agitation. Ensure the sprayer and pre-mix tank is cleaned according to instructions on label of the product used prior to Marengo Herbicide. Use only clean water for the spray solution. **Ensure that all in-line strainer and nozzle screens in the sprayer are **50 mesh or coarser**. Screens of 80 mesh size or finer should not be used.**
2. Begin to fill sprayer tank or premix tank with clean water, and engage agitator. **Agitation must be continued throughout the entire mixing and spraying procedure.**
3. When the sprayer or premix tank is three quarters full of water, add Marengo Herbicide. If more than 1 case of Marengo Herbicide is to be used, add the Marengo Herbicide from all cases prior to adding tank mixed products or Turbocharge Adjuvant.
4. If tank mixing, add the recommended product(s) next.
5. Lastly, add Turbocharge Adjuvant, and then continue to fill tank to desired level with water.

### GROUND SPRAYING INSTRUCTIONS

1. Apply in a spray volume of 50-100 L/ha at a pressure of 275 kPa to ensure proper dispersion, spraying characteristics and performance of Marengo Herbicide.
2. Flat fan nozzles of 80° or 110° are recommended for optimum coverage. Do not use floodjet nozzles or controlled droplet application equipment. Nozzles may be angled forward 45° to enhance penetration of the crop and provide better coverage. Ensure that all in-line strainer and nozzle screens in the sprayer are 50 mesh or coarser. Screens of 80 mesh or finer should not be used.
3. Always ensure that agitation is continued until spraying is completed, even if stopped for brief periods of time. **If the agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying. Do not begin spraying until fully re-suspended. Marengo Herbicide must be sprayed within the same day of mixing.**
4. When spraying is completed and prior to using other products, ensure the sprayer tank is thoroughly rinsed with clean water to remove any remaining Marengo Herbicide residues. Using a pressure washer and the addition of a detergent or Agral® 90 to the rinse water will enhance removal of residues.

## **AERIAL APPLICATION**

### **Generic Aerial Application Label Instructions - Directions for Use**

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

### **Use Precautions**

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the *Basic Knowledge Requirements for Pesticide Education in Canada: Applicator Core and Aerial Module*, developed by CAPCO.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

### **Operator Precautions**

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear chemical resistant gloves, coveralls and goggles or face shield during mixing/loading, cleanup and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

## **AERIAL SPRAYING INSTRUCTIONS**

1. Apply in a spray volume of 30 to 45 L/ha at a pressure of 140-275 kPa to ensure proper dispersion, spraying characteristics and performance of Marengo Herbicide.
2. Flat fan nozzles of 80° or 110° are recommended for optimum coverage. Do not use floodjet nozzles or controlled droplet application equipment. **Ensure that all in-line strainer and nozzle screens in the sprayer are **50 mesh or coarser**.** Screens of 80 mesh size or finer should not be used.
3. Always ensure that agitation is continued until spraying is completed, even if stopped for brief periods of time. **If the agitation is stopped for more than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying. Marengo Herbicide must be sprayed within the same day of mixing.**
4. Do not apply Marengo Herbicide if the wind is more than 13 km/h. This will avoid spray drift onto non-target areas.

5. **Do not** spray Marengo Herbicide if tame oats are present in adjacent, downwind fields.
6. When spraying is completed and prior to using other products, ensure the sprayer tank is thoroughly rinsed with clean water to remove any remaining Marengo Herbicide residues. Using a pressure washer and the addition of a detergent or Agral 90 to the rinse water will enhance removal of residues.
7. **DO NOT APPLY within 50 m of non-crop areas.** This includes fish-bearing waters, wetlands (potholes, sloughs etc.) and wildlife habitat (hedgerows, rights of way, etc.).

#### **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, Marengo Herbicide is a Group 1 herbicide. Any weed population may contain or develop plants naturally resistant to Marengo Herbicide and other Group 1 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 Marengo Herbicide or other Group 1 herbicides 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.
- Herbicide use should be based on an IPM program that includes scouting, historical information related to herbicide use and crop rotation, and considers tillage (or other mechanical), cultural, biological and other chemical control practices.
- Monitor treated weed populations for resistance development.
- Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment and planting clean seed.
- 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 Viterro Inc. at 1-866-569-4411.

**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. The user assumes the risk to persons or property that arises from any such use of this product.

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