

Data Pak

GROUP	7	HERBICIDE
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LINURON 400L

HERBICIDE

COMMERCIAL

READ THE LABEL AND ATTACHED BOOKLET BEFORE USING

GUARANTEE: LINURON 400 g/L

CONTAINS 1,2-BENZISOTHIAZOLIN-3-ONE AT 0.0038 % AS A PRESERVATIVE.

REGISTRATION NO. 15544

PEST CONTROL PRODUCTS ACT

UNITED AGRI PRODUCTS CANADA INC.

789 Donnybrook Drive

Dorchester, Ontario

N0L 1G5

1-800-265-4624

NET CONTENTS: 10L

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DIRECTIONS FOR USE

LINURON 400L is a liquid suspension to be mixed with water and applied as a spray for selective weed control of annual weeds in various crops listed on the label.

Do not make more than one application per season. Excessive or repeated use of LINURON 400L may cause damage to turnips grown on the same land in the following year. Do not use on sandy or coarse textured soils low in organic matter (less than 2% unless otherwise stated on the label) as crop injury may result. Do not replant to other crops within 4 months after application.

CAUTION: Do not graze the treated crops or cut for hay; sufficient data are not available to support such use.

MIXING: Shake well before using. Add the LINURON 400L to the water in the spray tank. Keep the mixture agitated until tank is empty. If necessary to let mixture stand, agitate thoroughly before spraying. Thoroughly clean all traces of LINURON 400L from sprayer immediately after use. Flush tank, pump, hoses and boom several times with water after removing nozzles, and screens (clean these separately). LINURON 400L is non-corrosive, non-volatile and non-flammable.

PRE-EMERGENCE USE: The soil should be well prepared and as free as possible from trash and clods, plant seed to specified depth on flat or raised seed beds or crop injury may result. Treatment provides control of annual weed seedlings.

Sufficient moisture (usually 3-5 cm) in the form of rainfall or irrigation is necessary after treatment to carry the chemical into the root zone of germinating weeds; best results are obtained when this occurs within 7-10 days after application. If moisture is insufficient to activate the chemical or if the soil becomes crusted before crop emerges, a shallow (2-4 cm) rotary hoeing should be made before weeds become well established otherwise avoid cultivating or disturbing the sprayed soil. Do not cover treated band with soil while cultivating between the rows.

NOTE: If unusually heavy rains follow pre-emergent application, severe injury to field corn, soybeans, carrots, parsnips or potatoes may result. Do not use on very wet or poorly drained soil.

POST-EMERGENCE USE (Field corn, Carrots, Wheat, Barley and Fruit trees) - Treatment provides contact kill of growing annual weeds as well as control of germinating weed seedlings. Where addition of a surfactant to the spray mixture is recommended, dilute with 10 parts of water and add as the last ingredient to a nearly full tank.

USE RATES AND SOIL LIMITATIONS - All dosages are expressed as broadcast rates. For band treatment, use proportionately less; for example, for 30 cm band on 90 cm row, use 1/3 of the broadcast rate. Where a range of dosage rates is given, use the lower rates on lighter soil (lower in clay or organic matter) and the higher rates on heavier soils. DO NOT USE ON SANDY OR COARSE-TEXTURED SOILS LOW IN ORGANIC MATTER, AS CROP INJURY MAY RESULT.

EQUIPMENT - Use a fixed boom power sprayer properly calibrated to ensure a constant rate of application. Openings in screens should be equal to or larger than 50 mesh. Agitate by mechanical or hydraulic means in the spray tank. If by-pass or return line is used, it should terminate at the bottom of the tank to minimize foaming.

REPLANTING: If initial seeding of soybeans, potatoes, parsnips, or carrots fails to produce a stand, the same crop may be replanted in soil treated with LINURON 400L. Thoroughly rework soil before replanting. Do not re-treat field with a second application as injury to the crop may result. Do not replant treated areas to other crops within 4 months after last application as injury to subsequent crops may result.

SUSCEPTIBLE WEEDS: The following weeds can be controlled with LINURON 400L, depending on rate and size of weeds: most annual grasses and (in alphabetical order) Common Chickweed, Corn Spurry, Goosefoot, Groundsel, Knotweed, Kochia, Lamb's quarters, Prostrate Pigweed, Purslane, Ragweed, Redroot Pigweed, Shepherd's purse, Smartweed, Wild Buckwheat, Wild Radish, Wormseed Mustard; also seedlings of Dandelion, Plantain and Sowthistle. It will not control established perennial weeds.

RESISTANCE-MANAGEMENT RECOMMENDATIONS: For resistance management, LINURON 400L is a Group 7 herbicide. Any weed population may contain or develop plants naturally resistant to LINURON 400L and other Group 7 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 LINURON 400L or other Group 7 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 (and 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 Technical Service at 1-800-265-4624 or at www.uap.ca.

SELECTIVE USE IN CROPS

FIELD CORN — Pre-emergence application.

When tank mixing, always consult tank mix partner label(s) for complete information/restrictions. LINURON 400L plus ATRAZINE — Make a single application of LINURON 400L in combination with ATRAZINE, as a band or broadcast spray after planting (at least 5 cm deep) but before corn emerges. Do not spray over top of corn. Do not follow treated corn with sugar beets, tobacco or vegetables in rotation. Prior to replanting to any crop following treated corn, thorough seedbed preparation including fall or spring ploughing is recommended.

BROADCAST APPLICATION

Soils	Apply in 225-335 L/ha Water	ATRAZINE
Loam or Clay Types	LINURON 400L plus	
Light coloured – low organic matter (2% or less)	2.7 L	See ATRAZINE label for directions
Dark coloured – moderate organic matter (2-5%)	3.9 L	

LINURON 400L plus ATRAZINE 90WG (or ATRAZINE 480) plus DUAL II MAGNUM or LINURON 400L plus PRIMEXTRA II MAGNUM. For Triazine-Resistant Lamb's-quarters and Triazine-Resistant Redroot pigweed.

Make a single application of LINURON 400L in combination with ATRAZINE and DUAL II MAGNUM or LINURON 400L plus PRIMEXTRA II MAGNUM as a band or broadcast spray after planting (at least 5 cm deep) but before corn emerges.

Do not spray over top of corn. Do not follow treated corn with sugar beets, tobacco or vegetables in rotation. Prior to planting any crop following treated corn, thorough seed bed preparation including fall or spring ploughing is recommended.

RATES TO USE — Apply 1-1.8 L of LINURON 400L with 1.25-1.75 L of DUAL II MAGNUM and 1.25-1.75 kg of ATRAZINE 90WG (2.1-3.1 L of ATRAZINE 480) OR 1-1.8 L of LINURON 400L with 3-4 L of PRIMEXTRA II MAGNUM in 225-335 L/ha of water. Use the lower rate on light coloured soils low in organic matter, (less than 2%). Use the higher rate on dark soils with up to 7% organic matter.

REPLANTING —Fields treated with a combination of LINURON 400L and ATRAZINE or PRIMEXTRA II MAGNUM may be replanted to the same crop if initial seeding fails to produce a stand. Thoroughly rework soil before replanting. Do not replant treated areas to any crop other than corn within one year after application as injury to subsequent crops may result.

In the Prairie Provinces and Interior British Columbia, corn must be planted the year following application. When extended periods of dry weather occur during the year of treatment, there can be some injury to succeeding crops. Please refer to the ATRAZINE or PRIMEXTRA II MAGNUM label for pertinent recommendations or restrictions on rotational crops.

FIELD CORN-DIRECTED POST-EMERGENCE APPLICATION — For field corn NOT treated pre-emergence with LINURON 400L in combination with ATRAZINE or ATRAZINE plus DUAL II MAGNUM, make a single application of LINURON 400L as a directed spray after corn is at least 38 cm high (measured to the highest leaf surface of free standing plants). DO NOT SPRAY OVER TOP OF CORN. Treatment effectively controls nutsedge, crabgrass, and many other annual weeds, but is to be applied only when there is sufficient differential between height of corn and weeds. Direct spray to thoroughly cover all weed foliage without contact of upper leaves or whorl of corn by spray or drift, as such contact may cause crop injury. Early application of 2,4-D (follow label directions) and/or early cultivation (rotary hoe or other suitable equipment) will aid in achieving proper differential between height of corn and weeds.

Use 2.9-5.4 L LINURON 400L plus an oil-water emulsion (follow oil label directions carefully). Apply at low pressure, in 170-340 L/ha of water of ground actually sprayed. Use the lower rates when weeds do not exceed 5 cm in height; use the higher rates for weeds up to 20 cm in height, preferably before weeds are 12 cm high. Control of weeds under drought stress or over 20 cm in height is usually impractical.

NOTE: If a heavy rain follows immediately after application, this treatment may be ineffective. Do not apply within 60 days of harvest.

DIRECTIONS FOR USE

VOLUME OF WATER:	Use 200 to 400 litres of water per hectare for overall spraying	LINURON 400L RATES/HECTARE (Overall)	
CROP	METHOD	Muck and clay soil with medium organic matter	Loam or clay soil with low organic matter
SOYBEAN Plant seed at least 5 cm deep	Apply LINURON 400L as a band or broadcast spray after planting but before soybeans emerge. Do not use on sand or coarse textured soils low in organic matter (less than 3%). Do not spray on emerged crop.	3.9-5.4 L	2.7-3.9 L
Rotary hoe may be used	1. At planting time. Light, incorporation improves control and reduces possible injury from splashed soil.		
Pre-emergence	2. STALE SEEDBED. Prepare seedbed 3 to 4 weeks before planting without further cultivation prior to seeding, allowing weed seedlings to emerge. Plant soybeans at least 4.5 cm deep with a double disc opener keeping disturbance of soil to a minimum. Apply as a broadcast spray. Control less dependent on rainfall.	2.75-4.25 L in 200-300 L of water per hectare	

Choose one of the following:

1. To control annual grasses, nightshade, broadleaf weeds, and yellow nutsedge. Preplant incorporate DUAL II MAGNUM at 1.15 to 1.75 L/ha followed after planting with LINURON 400L pre-emergently at 2.1 to 2.8 L/ha depending on soil type.*

2. SOYBEANS - EASTERN CANADA ONLY - LINURON 400L plus DUAL II MAGNUM. LINURON 400L PLUS DUAL II MAGNUM is recommended for use in soybeans as a pre-emergence tank mix or split application treatment for the control of many annual broadleaf weeds and grasses. American nightshade is controlled.

Yellow nutsedge is controlled by the split application.

RATES OF USE: Apply 2.3 - 2.8 L/ha LINURON 400L and 1.15 - 1.75 L/ha DUAL II MAGNUM for all treatments.

PRE-EMERGENCE: Apply a tank mix in 150 L/ha of water.

SPLIT APPLICATION: Apply DUAL II MAGNUM pre-plant incorporated followed by LINURON 400L pre-emergence.

Apply as a band or broadcast treatment before crops and weeds emerge. Carefully follow the instructions for incorporation of the DUAL II MAGNUM label.

NOTE: Do not use DUAL II MAGNUM on muck, peat muck or high organic matter soils. Do not use on sandy or coarse textured soil, low in organic matter. Do not incorporate tank mixes of LINURON 400L and DUAL II MAGNUM.

3. To control annual grasses and broadleaf weeds. Preplant incorporate TRIFLURALIN 400 at 0.6 to 1.14 kg active ingredient per hectare (eg. BONANZA 400 at 1.5 to 2.75 L/ha), followed after planting with LINURON 400L pre-emergently at 2.1 to 2.8 L/ha depending on soil type.*

*Refer to the DUAL II MAGNUM, or BONANZA 400 label for directions on use and special precautions.

4. For fields which contain weeds other than those listed on the LINURON 400L or PURSUIT labels alone, tank-mixing may be required to provide broad spectrum weed control. For LINURON 400L rates, refer to soybean table. Follow rates, recommendations, precautions and restrictions on the PURSUIT label.

TANK MIXING INSTRUCTIONS: Fill the spray tank 1/2 - 3/4 full with water. Use a calibrated measuring device to add the required amount of LINURON 400L and make sure it is thoroughly mixed. Using a separate calibrated measuring device, add the required amount of PURSUIT while agitating the spray solution. Fill the remainder of the tank with water.

CROP	METHOD	Muck and clay soil with medium organic matter	Loam or clay soil with low organic matter
POTATO Plant seed at least 5 cm deep	Apply just before crop emerges or when tops are completely covered by hilling. Avoid further cultivation until absolutely necessary. Treat before emerged grasses are 5 cm tall and before broadleaf weeds are 15 cm tall.	4.25-5.5 L	2.75-4.25 L

To control annual grasses, yellow nutsedge, annual nightshade and annual broadleaf weeds. Preplant incorporate DUAL II MAGNUM at 1.25 to 1.75 L/ha applied before planting followed after planting pre-emergently with LINURON 400L at 2.5 to 2.8 L/ha depending on soil type.

Or

Pre-emergently apply a tank mix of DUAL II MAGNUM at 1.25 to 1.75 L/ha plus LINURON 400L at 2.2 to 2.8 L/ha depending on soil type.

Follow the DUAL II MAGNUM label for full instructions.

NOTE: Do not use the LINURON 400L plus DUAL II MAGNUM tank mix on the potato variety Superior. Do not use DUAL II MAGNUM on muck, peat muck or high organic matter soils. Do not use on sandy or coarse textured soil, low in organic matter. Do not soil incorporate tank mixtures of LINURON 400L AND DUAL II MAGNUM. Do not use at ground crack if potatoes have emerged.

CROP	METHOD	Muck and clay soil with medium organic matter	Loam or clay soil with low organic matter
PARSNIP, DILL Pre-emergence	Plant seed at least 1.5 cm deep. Apply after planting. Rain or irrigation is needed for good control. Additional post-emergence treatment may be needed.	2-2.75 L	1.5-2L

CARROTS

PRE-EMERGENCE APPLICATION - Make a single application of 1.3-4 L/ha in 225-335 L of water of ground actually sprayed. Apply as a band or broadcast spray after planting (at least 1 cm deep) but before carrots emerge. See paragraph on Soil Limitations.

NOTE: Crop injury may result from pre-emergence application at the higher rate.

POST-EMERGENCE APPLICATION - For carrots NOT treated pre-emergence, make a single application of LINURON 400L as a non-directed spray when carrots have two or more fully developed true leaves (8-15 cm tall). Use 2.7-5.4 L in 225-335 L/ha water of ground actually sprayed. Use the lower rate on small seedling weeds and the higher rate on larger established weeds. Apply before annual grasses exceed 5 cm in height and before broadleaf weeds exceed 15 cm in height. Use nozzle pressure of 175-275 kPa; do not exceed 275 kPa as crop injury may result. Do not apply LINURON 400L as a tank mixture with herbicidal oil or with a surfactant nor when temperatures exceed 32° C, as crop injury may result.

COMBINATION PRE PLUS POST-EMERGENCE APPLICATION - Make a pre-emergence application of LINURON 400L at 1.3-2.7 L/ha and follow with a post-emergence application of 2.7-5.4 L/ha provided treatments are at least 2 weeks apart.

Shorter time intervals between applications may result in injury to the crop. Observe limitations detailed above for pre and post-emergence use in carrots.

NOTE: If unusually heavy rains follow application, severe injury may result.

CROP	METHOD	Muck and clay soil with medium organic matter	Loam or clay soil with low organic matter
ASPARAGUS Pre-emergence	Apply before cutting season immediately following Pre-emergence discing and repeat at the end of the cutting season after discing	5.5 L	4.25 L

SPRING WHEAT, OATS and BARLEY

LINURON 400L plus MCPA - Make a single application of LINURON 400L in combination with MCPA as a tank mix. Apply at the 2-4 leaf stage of cereals. Initial temporary lightening of crop colour may be observed. Later spraying reduces crop tolerance and weed control. Early application is important to avoid crop injury, especially to barley.

RATE OF APPLICATION PER HECTARE

Use 100 L/ha water at 200-

275 kPa

LINURON 400L +

MCPA AMINE 500

or MCPA POTASSIUM 400

510-660 mL +

0.85-1.1 L

or 1-1.4 L

Use the lower rate when growing conditions and rain fall are above average. 10 L LINURON 400L will treat 15-20 hectares depending on rate chosen.

DO NOT APPLY TANK MIXES OF LINURON 400L AND MCPA POTASSIUM 400 TO OATS.

TREATMENT - Treatment is recommended for control of certain annual weeds in spring wheat, oats and barley. Barley may suffer some growth suppression, maturity delay and yield reduction, but these would be more than offset if the weed infestation is heavy. Application at the 1-4 leaf stage will control top growth of Canada thistle and annual weeds such as Tartary buckwheat, Wild buckwheat, Cow cockle, Flixweed, Hemp-nettle, Green smartweed, Corn spurry, Lady's-thumb, Stinkweed, Stork's-bill, Redroot pigweed, Lamb's-quarters, Chickweed, Shepherd's-purse and Ragweed. When applied at the 1-3 leaf stage of Green foxtail, suppression may be obtained. Some annual weeds such as Barnyardgrass, Cleavers, Russian thistle and Wild oat, and perennial weeds such as Bindweed and Quackgrass are not controlled.

APPLICATION INSTRUCTIONS - Mix the proper amount of LINURON 400L into the necessary volume of water in the spray tank with the agitator running. For a tank mixture, slowly add the required amount of MCPA as the last ingredient to the spray tank. Continuous agitation in the spray tank is required. Avoid overlapping and shut off spray boom while starting, turning, slowing or stopping, or injury to the crop may result.

Ensure that the sprayer is equipped with 50 mesh line strainers and screens. Stainless steel or hardened steel nozzles are recommended.

The sprayer pump must be of sufficient capacity to supply adequate agitation through the bypass or jet agitator which should terminate in the bottom of the tank. The Hypro C6400 (6 roller) nylon roller pump generally will not supply sufficient agitation and nozzle output. The Hypro C7700 (7 roller) nylon roller pump usually has sufficient capacity to apply 100 L/ha and keep the material in the sprayer in suspension. The ideal pumps are the Hypro C1700 (5 roller) Teflon roller pump and the Hypro C1500 (6 roller) pump.

NOTE: Do not use when crops are under drought stress. Do not use when crop is underseeded to forage crops. Do not graze or feed green plants to livestock. Do not treat field with a second application of LINURON 400L during the same crop year as injury to crop may result.

SWEET WHITE LUPINS

Apply LINURON 400L at 2.5-3.7 L/ha as a broadcast spray after planting (at least 5 cm deep) but before lupins emerge.

Use the lower rate on light coloured soils with less than 2% organic matter. Do not spray after lupins have emerged. Refer to section on "Selective Use in Crops" for more information on pre-emergence use, soil limitations and replanting. Do not harvest lupins within 80 days of treatment.

FRUIT TREES

Apple, Cherry, Peach, Pear, Plum - Make a single application of 10.8 L LINURON 400L/ha plus a surfactant in 400-600 L/ha water of ground actually sprayed. Apply as a directed spray under the trees before weeds are 10 cm high. Avoid contact of fruit, foliage, and green bark with spray or drift as injury to the trees may result. Use only where trees have been established in the orchard for at least 10 years (1 year in the case of peach trees.)

SHELTERBELTS IN WESTERN CANADA

American elm	Poplar
Boxelder	Willow
Caragana	White spruce
Colorado spruce	Scotch pine
Green ash	Siberian elm

Make a single application of LINURON 400L at 5.4 L/ha.

Apply only on stock planted for at least one year as a directed spray under the trees and bushes before weeds are 10 cm high and before buds open in the spring.

CHOKECHERRIES (fall seeded plantings)	For control of annual broadleaf weeds and grass: Application should be made in October after Chokecherries are sown. Only make one application per year.	Apply 4.25 L per hectare in 215 litres of water.
SASKATOON BERRIES (established plantings for at least one year)	Apply in the fall or early spring as a directed spray to uniformly cover the soil surface and emerged weeds without contacting the crop foliage. Use the lower rate on coarse textured soils with 2% or less organic matter. For control of annual broadleaf weeds and grass: Do not apply more than once per season. Do not apply within fifty (50) days of harvest.	Apply 5 to 7.5 L per hectare in 225-335 L of water.

The Directions for Use for Sweet Corn were developed by persons other than United Agri Products Canada Inc. and accepted for registration by Health Canada under the User Requested Minor Use Label Expansion Program.

United Agri Products Canada Inc. itself makes no representation or warranty with respect to performance (efficacy) and/or crop tolerance (phytotoxicity) claims for this product when used on Sweet Corn.

Accordingly, the Buyer and User assume all risks related to performance and crop tolerance arising, and agree to hold United Agri Products Canada Inc. harmless from any claims based on efficacy and/or phytotoxicity in connection with the use described for Sweet Corn.

SWEET CORN

PRE-EMERGENT APPLICATION - For control of weeds listed on the LINURON 400L, ATRAZINE, AND DUAL II MAGNUM labels including triazine tolerant weeds. Apply as a pre-emergent spray mix of 0.95 to 1.9 L/Ha of LINURON 400L plus 1.1 to 1.7 kg/ha ATRAZINE 90WG (2 - 3.1 L/ha ATRAZINE 480) plus 1.25 L/ha DUAL II MAGNUM. Apply in a minimum of 150 L of water per hectare. DO NOT apply within 50 days of harvest.

Apply only once per year. Refer to tank mix partners for further instructions.

PRECAUTIONS

KEEP OUT OF REACH OF CHILDREN. May cause irritation to eyes, nose, throat and skin. Do not breathe spray mist. Avoid contact with clothes, eyes or skin. Wash thoroughly after handling. Do not take internally. Do not contaminate feed, food or streams, lakes and ponds with this product. Do not apply (except as recommended for crop use) or drain equipment near desirable trees or other plants, or on areas where their roots may extend, or where the chemical may be washed or moved into contact with their roots. Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants. Keep from contact with fertilizers, insecticides, fungicides and seeds. Keep from freezing. DO NOT APPLY BY AIR. 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 website at www.croplife.ca/.

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 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.

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.

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

TOXICOLOGICAL INFORMATION: Treat symptomatically.

DISPOSAL

1. Triple-or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions 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 the 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. The user assumes the risk to persons or property that arises from any such use of this product.

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