

DEC 22 1994

Mr. Robert F. Bischoff
DowElanco
9330 Zionsville Road
Indianapolis, Indiana 46268

Subject: New Basic Formulation; Revised Labeling
Lorsban 4E-SG
EPA Registration Number 62719-245
Your Applications Dated October 13, 1994

Dear Mr. Bischoff:

The new basic formulation for this product, shown on the Confidential Statement of Formula dated October 10, 1994, is acceptable. It is understood that this formulation supersedes and replaces all previous formulations.

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, is acceptable. A stamped copy is enclosed for your records.

Sincerely yours,

DHE

Dennis H. Edwards, Jr.
Product Manager (19)
Insecticide-Rodenticide Branch
Registration Division (7505C)

Enclosure

October 11, 1994

1

Lorsban* 4E-SG

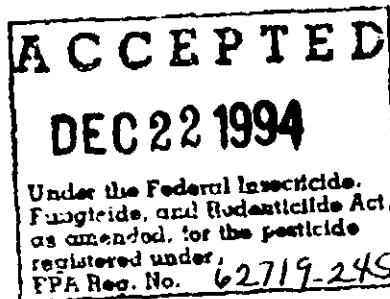
EPA Reg. No. 62719-245

Proposed Label Amendment: Current label text based on EPA-accepted copy dated 01/26/94.

Proposed Amendments:

1. Revised Ingredients Statement and Precautionary Statements in accordance with changes in formulation and CSF.
2. Revised precautionary language and PPE requirements in accordance with Cat. II toxicity for acute dermal toxicity and eye irritation.
3. Minor edits to correct spelling, punctuation and use of u/l case.

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(baselabel)

<p>RESTRICTED USE PESTICIDE DUE TO ACUTE TOXICITY TO AVIAN AND AQUATIC ORGANISM For retail sale to and use only by certified Applicators or persons under their direct supervision and only for those uses covered by the certified Applicator's certification.</p>
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(logo) DowElanco

Lorsban* 4E-SG

For distribution and use only in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, New Mexico, Nevada, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming.

For control of aphids, including Russian wheat aphid, grasshoppers, wheat midge, and cutworms infesting wheat.

Active Ingredient:

chlorpyrifos: O,O-diethyl-O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate.....	41.7	44.9%
Inert Ingredients	58.3	55.1%
Total		100.0%

Contains 4 pounds of chlorpyrifos per gallon.
Contains aromatic petroleum distillates.

Precautionary Statements

Hazards to Humans and Domestic Animals

Keep Out of Reach of Children

WARNING

AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

May Be Fatal If Swallowed - Harmful If Or Absorbed Through Skin • Causes Substantial But Temporary Eye Injury • Causes Skin Irritation • Lorsban4E-SG May Cause Skin Sensitization Reactions In Certain Individuals

Avoid breathing vapor or spray mist. Do not get in eyes, on skin or on clothing.

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selections chart.

Applicators and other handlers must wear:

- ~~Long-sleeved shirt and long pants~~ Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant shoes plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment and mixing or loading

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- 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 immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

~~An o~~**rganophosphate -pesticide/miticide.**

If swallowed: Call a physician or Poison Control Center immediately. Do not induce vomiting. Contains aromatic petroleum solvent. Do not give anything by mouth to an unconscious person.

If in eyes: Flush with plenty of water for at least 15 minutes. Get medical attention.

If on skin: Wash with plenty of soap and water. Get medical attention ~~if irritation persists.~~

If inhaled: Remove to fresh air if ~~effects occur~~ symptoms of cholinesterase inhibition appear and get medical attention immediately.

Note to physician: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration.

Environmental Hazards

This pesticide is toxic to birds and wildlife, and extremely toxic to fish and aquatic organisms. Do not apply directly to water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Cover or incorporate spills. Do not contaminate water by cleaning of equipment or disposal of waste. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees

are visiting the treatment area. Protective information may be obtained from your cooperative agricultural extension service.

Physical or Chemical Hazards

Combustible - Do not use or store near heat or open flame. Do not cut or weld container.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to the label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to label booklet for additional precautionary information including Personal Protective Equipment (PPE) and User Safety Recommendations, and Directions for Use including Storage and Disposal.

Notice: Read the entire label. Use only according to label directions. **Before buying or using this product, read "Warranty Disclaimer" and "Limitation of Remedies".**

In case of emergency endangering health or the environment involving this product, call collect 517-636-4400.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

EPA Reg. No. 62719-245

MM WP

EPA Est. 464-MI-1; 464-CA-1

Superscripts correspond to first letters of lot number.
Specification Number

Level 70

*Trademark of DowElanco

DowElanco • Indianapolis, IN 46268 U.S.A.

Insecticide

Net Contents xxxx

(Label Booklet)
(logo) DowElanco

Lorsban[®] 4E-SG

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For control of aphids, including Russian wheat aphid, grasshoppers, wheat midge, and cutworms infesting wheat.

Active Ingredient:

chlorpyrifos: O,O-diethyl-O-(3,5,6-trichloro-2-pyridinyl)

phosphorothioate.....41.7 44.9%

Inert Ingredients.....58.3 55.1%

Total.....100.0%

Contains 4 pounds of chlorpyrifos per gallon.

Contains aromatic petroleum distillates.

Keep Out of Reach of Children

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Applicators and other handlers must wear:

- ~~Long-sleeved shirt and long pants~~ Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant shoes plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment and mixing or loading

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

User Safety Recommendations

Users should:

- 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 immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

First Aid

~~An Organophosphate pesticide/miticide.~~

If swallowed: Call a physician or Poison Control Center immediately. Do not induce vomiting. Contains aromatic petroleum solvent. Do not give anything by mouth to an unconscious person.

If in eyes: Flush with plenty of water for at least 15 minutes. Get medical attention.

If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

If inhaled: Remove to fresh air if ~~effects occur~~ symptoms of cholinesterase inhibition appear and get medical attention immediately.

Note to physician: Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration.

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Physical or Chemical Hazards

Combustible - Do not use or store near heat or open flame. Do not cut or weld container.

Directions for Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Read all Directions for Use carefully before applying.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your state or tribe, consult the agency responsible for pesticide regulation.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as Barrier Laminate or Viton
- Chemical-resistant shoes plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

Storage and Disposal

Storage: Store in original container in secured dry storage area. Prevent cross-contamination with other pesticides and fertilizers. Do not store above 100°F for extended periods of time. Storage below 20°F may result in formation of crystals. If product crystallizes, store at 50 to 70°F and agitate to redissolve crystals. If container is damaged or spill occurs, use product immediately or dispose of product and damaged container as indicated below.

Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA Regional Office for guidance.

Container Disposal for Refillable Containers: Replace the dry disconnect cap, if applicable, and seal all openings which have been opened during use. Return the empty container to a collection site designated by DowElanco. If the container has been damaged and cannot be returned according to the recommended procedures contact the DowElanco Customer Service Center at 1-800-258-3033 to obtain proper handling instructions.

Container Disposal for Non-Refillable Containers: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

or

Triple rinse (or equivalent). Then puncture and dispose in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

General Information

Lorsban® 4E-SG insecticide forms an emulsion when diluted with water and is suitable for use in all conventional spray equipment. Consult your state experiment station or state extension service for proper timing of applications.

General Use Precautions

Do not use on turf or for structural pest control. Do not formulate this product into other end use products.

Mixing Directions

To prepare the spray, add a portion of the required amount of water to the spray tank and with agitation add the Lorsban 4E-SG. Complete filling the tank with the balance of water needed. Maintain sufficient agitation during both mixing and application to ensure uniformity of the spray mixture.

Lorsban 4E-SG may also be used in tank mixtures with certain herbicides and/or with non-pressure fertilizer solutions as recommended under specific crop use directions. Prepare tank mixtures in the same manner as recommended above for use of Lorsban 4E-SG alone. When tank mixtures of Lorsban 4E-SG and herbicides are involved, add wettable powders first, flowables second, and emulsifiable concentrates last. Where a fertilizer solution is involved, it is strongly recommended that a fertilizer pesticide compatibility agent such as Unite or Compex be used. Maintain constant agitation during both mixing and application to ensure uniformity of the spray mixture. Do not allow spray mixtures to stand overnight.

Note: Test compatibility of the intended tank mixture before adding Lorsban 4E-SG to the spray or mix tank. Add proportionate amounts of each ingredient to a pint or quart jar, cap, shake, and let set 15 minutes. Formation of precipitates that do not readily redisperse indicates an incompatible mixture that should not be used.

Sprinkler Irrigation

Special Use Directions

The following use directions are to be followed when Lorsban 4E-SG is applied through sprinkler irrigation systems. Thoroughly clean the injection system and tank of any fertilizer or chemical residues, and dispose of the residues according to state and federal laws. Flush the injector with soap and water. Determine the amount of insecticide needed to cover the desired acreage. Pump the required Lorsban 4E-SG into a steel tank, start mechanical or hydraulic agitation, and add in order the non-emulsifiable oil and/or water. Continually agitate the mixture containing Lorsban 4E-SG. Set the sprinkler system to deliver the desired inches of water per acre. Start the water pump and sprinkler, and let the system achieve the desired pressure and speed before starting the injector. Start the injector and calibrate the injector system according to number 14 in "Special Use Precautions". The mixture containing Lorsban 4E-SG must be injected continuously and uniformly into the irrigation water line as the sprinkler is moving. This procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, allow the entire irrigation and injector system to be thoroughly flushed clean before stopping the system.

Special Use Precautions

The following use precautions will result in a safe and successful application of mixtures containing Lorsban 4E-SG.

1. Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, micro sprinkler, or hand move. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
3. If you have questions about calibration, you should contact state extension service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.
5. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. Refer to the American Society of Agricultural Engineer's Engineering Practice 409 for more information.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. The metering pump must provide a greater pressure than that of the irrigation system at the point of injection. The pump must meet Section 675 for

"Electrically Driven or Controlled Irrigation Machines" NEC 70 and must contain Viton or Teflon seals.

12. To insure uniform mixing of the insecticide into the water line, inject the mixture through a nozzle placed in the fertilizer injection port or just ahead of an elbow or tee in the irrigation line so that the turbulence created at those points will assist in mixing. It is suggested that the injection point be higher than the insecticide tank to prevent siphoning.
13. The steel tank holding the insecticide mixture should be large enough to allow the system to complete a revolution with one filling. It should be free of rust, fertilizer, sediment, and foreign material, and equipped with an in-line strainer situated between the tank and the injector pump.
14. In order to calibrate the irrigation system and injector to apply the mixture containing Lorsban 4E-SG, determine the following: 1) Calculate the number of acres irrigated by the system, 2) Set the irrigation rate and determine the number of minutes for the system to cover the intended treatment area, 3) Calculate the total gallons of insecticide mixture needed to cover the desired acreage. Divide the total gallons of insecticide mixture needed by the number of minutes to cover the treatment area. This value equals the gallons per minute output that the injector must deliver. Convert the gallons per minute to milliliters or ounces per minute. Calibrate the injector pump with the system in operation at the desired irrigation rate. It is suggested that the injector pump be calibrated at least twice before operation, and the system should be monitored during operation.
15. Do not apply when wind speed favors drift beyond the area intended for treatment. End guns must be turned off during the application. if they irrigate nontarget areas.
16. Do not allow irrigation water to collect or runoff and pose a hazard to livestock, wells, or adjoining crops.
17. Allow foliage to dry before reentering the field.
18. Do not apply through sprinkler systems which deliver a low coefficient of uniformity such as certain water drive units.

Approved Crops

WHEAT

Use and Dosage recommendations

Apply Lorsban 4E-SG at the rate of 1/2 to 1 pint per acre (0.25 to 0.5 lb ai/acre) to control aphids (including Russian wheat aphid) and grasshoppers.

For control of wheat midge, use 1 pint of Lorsban 4E-SG per acre. Treatment is recommended when 75% of the wheat heads have emerged from the boot and when midge adults are found in the crop (1 midge per 4-5 heads). Application timing is critical to ensure good control. If possible, apply in the late afternoon or early evening when temperatures exceed 50F and wind speed is less than 7 mph.

For control of army cutworms and suppression of other cutworm species, use 1 pint of Lorsban 4E-SG per acre. Control may be reduced under high temperature conditions (greater than 80F), under dry soil conditions, or if larvae are more than 1/2 inch long. Treat when field counts or crop injury indicates that damaging pest populations are developing or present. A second application of 1 pint/acre may be made for additional control.

Mix the required dosage with water and apply in a minimum of 2 gallons per acre finished spray volume. Apply using aerial (fixed wing or helicopter) or power-operated ground spray equipment. Lorsban 4E-SG may also be applied through sprinkler-irrigation systems. If anyone sees dead birds or fish which may have been killed by chlorpyrifos, please call 1-800-258-3033.

Restrictions

- Do not make more than two applications per crop.
- Do not apply closer than 28 days before harvest.
- Do not allow livestock to graze or otherwise feed treated forage to livestock within 14 days of application
- Do not feed straw from treated wheat within 28 days after application.
- Do not apply directly to bodies of water.
- Do not apply product where runoff is likely to occur to aquatic habitats (including lakes, public reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries or other natural waters).
- Do not apply when weather conditions favor drift or runoff from treated areas.

Ground Application

- For ground applications, the distance from treated areas to aquatic habitats (including lakes, public reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries or other natural waters) must be 30 feet or more.
- Do not make ground applications if wind speed is greater than 15 mph.
- Do not apply at spray boom pressures greater than 45 psi.

Aerial Application

- Do not apply by air within 300 feet of aquatic habitats (including lakes, public reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries or other natural waters).
- Do not make aerial applications of Lorsban 4E-SG when wind speeds exceed 10 mph or when an atmospheric temperature inversion exists.
- Boom length should not exceed 75% of the wing span and release height for aerial applications should be no greater than 10 feet above the crop canopy.

Warranty Disclaimer

DowElanco warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. DowElanco MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Inherent Risks of Use

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of DowElanco or the seller. All such risks shall be assumed by buyer.

Limitation of Remedies

The exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at DowElanco's election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used

DowElanco shall not be liable for losses or damages resulting from handling or use of this product unless DowElanco is promptly notified of such loss or damage in writing. In no case shall DowElanco be liable for consequential or incidental damages or losses.

The terms of the Warranty Disclaimer above and this Limitation of Remedies cannot be varied by any written or verbal statements or agreements. No employee or sales agent of DowElanco or the seller is authorized to vary or exceed the terms of the Warranty Disclaimer or this Limitation of Remedies in any manner.

*Trademark of DowElanco