

279-2306

01/10/2002

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES  
AND TOXIC SUBSTANCES

Mr. Don Carlson  
FMC Corporation  
1735 Market Street  
Philadelphia, PA 19103

JAN 10 2002

Dear Mr. Carlson:

Subject: Amendment - Delete unsupported uses/add limitations  
Endosulfan Technical  
EPA Registration Number 279-2306  
Your submission dated August 31, 1999  
and your FAX dated October 18, 2000

The amendment referred to above, submitted in connection with registration under FIFRA section 3(c)(7)(a), is acceptable provided that you:

1. Submit and/or cite all data or other material required for registration/reregistration of your product under FIFRA section 3(c)(5) or FIFRA section 4 when the Agency requires all registrants of similar products to submit such data.
2. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:
  - a. In the ingredients statement, in the endosulfan formula name add "-3-" between "benzodioxethiopin" and "oxide".
  - b. The entire Statement of Practical Treatment should be updated to comply with the FIRST AID format indicated in PR Notice 2001-1.
  - c. In the fourth sentence of the Hazards to Humans, revise "apesticide" to "a pesticide".
  - d. Revise the ENVIRONMENTAL HAZARDS text to read as follows:

This product is toxic to fish, birds, and other wildlife. Do not discharge effluent containing this product directly into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the

permitting authority has been notified in writing prior to the discharge. Do not discharge effluent containing this product into sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the Environmental Protection Agency.

- e. Revise the PESTICIDE STORAGE text to read as follows (retain your current "In case of spill" and "To confine spill" text):

PESTICIDE STORAGE: Keep out of reach of children and animals. Store in tightly capped original containers only. Store in a cool, dry, well ventilated place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. The solid technical is sensitive to moisture, acids, and bases. Decomposition will generate sulfur dioxide and endosulfan alcohol. Care should be exercised by workers entering the storage area since there is the possibility that sulfur dioxide may be present. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

- f. Relocate the sentence "Formulators using this product are responsible for obtaining EPA registration for their formulated products." from the end of the label to appear as the first sentence after the heading Formulator Information. Please note that you may elect to delete the other 2 paragraphs since the same information is now presented in the Pesticide Storage section.

- g. Revise the first paragraph of the use limitations to read as follows:

THIS PRODUCT IS TO BE USED SOLELY FOR FORMULATION INTO end-use products for use on commercial agricultural crops and for outdoor commercial production of ornamental trees and shrubs. Do not use or formulate this product into any products in the form of a fogger, impregnated materials, insecticidal smoke, dust, pressurized liquid (i.e., spray cans - but not including EC or WP formulations applied by pump sprayers), or aerosol spray designed to automatically release the contents. The commercial use categories and formulation restrictions are described below.

h. Revise the second paragraph of the use limitations to read as follows:

DO NOT USE THIS PRODUCT TO FORMULATE END-USE PRODUCTS FOR:  
a) any use in or around a structure used as a residence or domestic dwelling, or on any articles or areas associated with such structures (including household contents, home gardens, and home greenhouses); or b) any use in the form of a fogger, impregnated materials, insecticidal smoke, dust, pressurized liquid (i.e., spray cans - but not including EC or WP formulations applied by pump sprayers), or aerosol spray inside a commercial greenhouse, or public or private building or structure (including recreational facilities, theaters, hotels, resorts, or other buildings use for public accommodation, or any other commercial, industrial, or institutional building), or on any articles or areas associated with such structures, including building contents and landscaping (but not including outdoor commercial ornamental tree and shrub production areas).

i. To prevent anyone from concluding that the listing of acceptable uses is just a continuation of the "Do not use this product to formulate" paragraph, directly above the listing of acceptable uses add the heading:

FOR FORMULATION INTO END-USE INSECTICIDE PRODUCTS FOR THE FOLLOWING USES:

- j. Revise the first use category to read OUTDOOR FRUIT AND NUT CROPS.
- k. In the OUTDOOR FRUIT AND NUT CROPS listing, delete the crop Macadamia Nuts since this only appears on a 24C label and the Task Force has decided 24C only uses will not appear on the technical labels due to their limited and changing status.
- l. In the Outdoor Fruit and Nut Crops listing, you may re-add the crop Raspberries (in its correct alphabetical location in the crop listing), which your cover letter had indicated is a supported use.
- m. Also in the OUTDOOR FRUIT AND NUT CROPS listing, since use on Strawberries is permitted both as a foliar and as a geographically limited dip application, Aventis has decided to do a double entry, so that their listing reads "Strawberries" immediately followed by "Strawberries(dip application - Northwest Use only)". The Agency assumes that you will choose to follow their label in this regard.

- n. In the FIELD AND VEGETABLE CROPS listing, delete the crop "Tea". Your cover letter indicates that this is only an import tolerance, therefore end-use products will not be formulated for this use in this country. Aventis has deleted this listing from their label for this reason. Also, Aventis lists the crop Melons as "Melons(all)". The Agency assumes that you will choose to follow their label in this regard.
  - o. Replace the heading ORNAMENTAL OUTDOOR USE with ORNAMENTAL TREES AND SHRUBS (COMMERCIALY GROWN OUTDOORS ONLY). Then delete the redundant subheading "Ornamental Trees and Shrubs" and just begin the listing.
  - p. Add the listing "Shrubs" in its appropriate alphabetical location under the new heading ORNAMENTAL TREES AND SHRUBS (COMMERCIALY GROWN OUTDOORS ONLY).
  - q. Under the new heading ORNAMENTAL TREES AND SHRUBS (COMMERCIALY GROWN OUTDOORS ONLY), expand the entry for Douglas Fir to read "Douglas Fir (grown for ornamentals, nursery stock or Christmas trees; Pacific Northwest only)".
  - r. Relocate the heading COMMERCIAL GREENHOUSE USE and the associated crop Tomatoes to appear directly after the Field and Vegetable Crops listing since this is another commercial agricultural use.
3. Submit three (3) copies of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

Sincerely,

George T. LaRocca  
 Product Manager 13  
 Insecticide Branch  
 Registration Division (7505C)

Code 1318

Net Weight

# Endosulfan Technical

## An Insecticide For Formulating Use Only

EPA Reg. No. 279-2306

EPA Est., 37404-IY-03

### Active Ingredients

Endosulfan (Hexachlorohexahydromethano-2,4,3-benzodioxathiepin oxide) ..... 95.0%

Inert Ingredients: ..... 5.0%  
100.0%

**☠ DANGER-POISON ☠**

See other panels for Additional Precautionary Information.

### Statement of Practical Treatment

If swallowed—Call a physician or Poison Control Center immediately. Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with finger. Repeat until vomit is clear. Do not induce vomiting or give anything by mouth to a person who is unconscious or convulsing.

If inhaled—Remove victim to fresh air. Apply artificial respiration if indicated. Get medical attention.

If on skin—Remove contaminated clothing and wash affected areas with soap and water. Get medical attention.

If in eyes—Flush eyes with plenty of water. Call a physician immediately.

Note to Physicians: Endosulfan is a central nervous system stimulant absorbable by mouth, inhalation or through contact with skin. It may cause convulsions. There is no specific antidote. Diazepam I.V. is the drug of choice. Barbituric acid derivatives such as Phenobarbital may be used additionally. A neuromuscular blocking agent may be used if convulsions persist. This type of drug may be used only if complete control of respiration can be maintained. Spinephrine derivatives are absolutely contraindicated.

For Emergency Assistance Call 1 (800) 331-3148

ACCEPTED  
with COMMENTS  
In EPA Letter Dated:  
JAN 10 2002

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 279-2306

# FMC.

FMC Corporation  
Agricultural Products Group  
Philadelphia PA 19103

### PRECAUTIONARY STATEMENTS Hazards to Humans (& Domestic Animals)

**Danger**  
Fatal if swallowed, inhaled, or absorbed through skin. Do not breathe vapors. Do not get in eyes and during operations wear clean protective clothing (such as coveralls, socks and shoes), protect eyes, and use a respirator with either an organic vapor-cartridge (MSHA Mine Safety and Health Administration) and NIOSH (National Institute for Occupational Safety and Health) approval number prefix TC-23 or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-4G). Wash thoroughly with soap and water after handling and before eating or drinking or smoking. Wash all contaminated clothing with soap and hot water before reuse.

### ENVIRONMENTAL HAZARDS

This product is toxic to fish, birds, and other wildlife. Do not discharge effluent containing this product directly into lakes, streams, ponds, estuaries, oceans or public waters unless this product is specifically identified and addressed in an NPDES Permit. Do not discharge effluent containing this product into sewer systems without previously notifying the sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the Environmental Protection Agency.

### DIRECTIONS FOR USE

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

### STORAGE AND DISPOSAL

**Pesticide Storage**  
Keep out of reach of children and animals. Store in original containers only. Store in a cool, dry, well ventilated place and avoid excess heat. Carefully re-close and cap tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.

**In case of spill, avoid contact, isolate area and keep out animals and unprotected persons.** Contain spills. Call FMC collect: 1-800-331-3148.

**To contain spills if liquid, sand, cat litter or kitty litter, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.**

**Pesticide Disposal**  
Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mix, or waste is a violation of Federal Law. If these wastes cannot be disposed of safely 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**  
Triple rinse (or equivalent) and reuse for recycling or reconditioning, or puncture and crush (if approved by state and local authorities). Do not cut or weld metal containers.

**Formulator Information**  
Endosulfan technical is stable when stored under proper well ventilated storage conditions. The salt technical is sensitive to moisture, acids and bases. Decomposition will generate sulfur dioxide and Endosulfan alcohol.

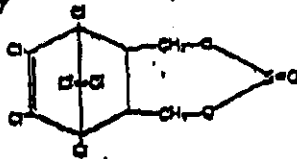
Endosulfan technical should be stored in a well ventilated area. All drums should be kept tightly capped. Caution should be exercised by workers entering the storage area since there is a possibility that sulfur dioxide may be present.

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**CHEMICAL AND PHYSICAL DATA**

American Standards Common Name: Endosulfan (en-do-sul-fan)  
 Chemical Name: 6,7,8,9,10,10-hexachloro-1,4,5a,5b,8,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin-3-oxide.

CAS Registry No.: 116-29-7  
 Chemical Structure:



Technical product contains 64-88% alpha (low melting) isomer and 29-52% beta (high melting) isomer.  
 C<sub>12</sub>H<sub>6</sub>O<sub>4</sub>S<sub>2</sub>

Empirical Formula Molecular Weight: 406.85  
 Appearance: Light to dark brown, crystalline solid in flake form.  
 Odor: Technical material has an odor of hexachlorocyclopentadiene and may have an SO<sub>2</sub> odor.  
 Density: 1.745 at 20°C. (apparent density in solution in xylene)  
 Melting Point: Technical 70-100°C  
 Pure (low melting isomer) 108°C  
 Pure (high melting isomer) 212°C  
 Solubility at 25°C:  
 Water <1.0 ppm  
 Organic Solvents % W/W  
 Isophenone 66  
 EMAN 50  
 Teryaco 500/100 45  
 Bition 42  
 Mulsiton 40  
 Solvesso 100 25  
 Karosene 20  
 Ethanol 5  
 Stability: Is sensitive to moisture, bases and acids.  
 Flammability: Not flammable  
 Explosive: None  
 Hazard:  
 Analytical Methods: Analytical methods are available through FMC Corporation, Agricultural Products Group, Quality Assurance Group, Midwayport, New York 14105

**THIS PRODUCT IS TO BE USED SOLELY FOR FORMULATION INTO end-use products for use on commercial agricultural crops and commercial ornamentals. The commercial use categories and formulation restriction is described below.**

**DO NOT USE THIS PRODUCT TO FORMULATE END-USE PRODUCTS FOR: a) any use in or around a structure used as a residence or domestic dwelling, or on any articles or area associated with such structures (including household contents, home gardens and greenhouses); or by any use in the form of a fogger, dust, pressurized liquid or spray inside a public building or structure, including recreational facilities, theaters, hotels, resorts or other buildings used for public accommodation.**

**FRUIT AND NUT CROPS:**

- |  |                         |
|--|-------------------------|
| Almonds                                    | Nectarines              |
| Apples                                     | Peaches                 |
| Apricots                                   | Peach Nursery Stock Dip |
| Blueberries                                | Pears                   |
| Cherries                                   | Pecans                  |
| Cherry Nursery Stock Dip                   | Pineapples              |
| Citrus (Non-Bearing Trees & Nursery Stock) | Pump                    |
| Filberts                                   | Pump Nursery Stock Dip  |
| Grapes                                     | Prunes                  |
| Macadamia Nuts                             | Strawberries            |
|  | Walnuts                 |

**FIELD AND VEGETABLE CROPS:**

- |                                     |                             |
|-------------------------------------|-----------------------------|
| Barley                              | Cauliflower                 |
| Beans (Succulent & Dry except Lima) | Celery                      |
| Broccoli                            | Collards                    |
| Brussels Sprouts                    | Cotton                      |
| Cabbages                            | Cucumbers                   |
| Carrots                             | Eggplants                   |
| Cauliflower                         | Kale                        |
| Celery                              | Lettuce                     |
| Collards                            | Melons                      |
| Cotton                              | Mustard Greens              |
| Cucumbers                           |                             |
| Eggplants                           |                             |
| Kale                                |                             |
| Lettuce                             |                             |
| Melons                              |                             |
| Mustard Greens                      |                             |
|                                     | Onions                      |
|                                     | Potatoes                    |
|                                     | Pumpkins                    |
|                                     | Rye                         |
|                                     | Spinach                     |
|                                     | Squash (Summer and Winter)  |
|                                     | Sweet Corn (Fresh use only) |
|                                     | Sweet Potatoes              |
|                                     | Tobacco                     |
|                                     | Tomatoes                    |
|                                     | Turnip Greens               |
|                                     | Wheat                       |

**ORNAMENTAL - OUTDOOR USE:**

- |  |   |
|--|---|
| Ornamental Trees and Shrubs<br>L.e., Boxelder<br>Dogwood<br>Douglas Fir<br>Elm<br>Lilia<br>Pine (Austrian, Jack, Red, Scotch, White) | Shade Trees (except Birch)<br>Spruce<br>Tilia |
|--|---|

**COMMERCIAL GREENHOUSE USE**

To know

Formulators using this product are responsible for obtaining EPA Registration for their formulated products.

**NOTICE**

Seller warrants that the product in this container conforms to its chemical description contained herein and is reasonably fit for its intended purpose when used in a precise and proper manner in accordance with proper manufacturing practices and procedures and any label directions. This warranty does not constitute a fitness for a particular purpose, or under abnormal or foreseeable conditions, or to use by Seller, and Buyer assumes all risk from breach of warranty or negligence not exceeding the purchase price. Seller shall not be liable for incidental or consequential damages such as, but not limited to, loss of profits or values.

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