



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

SEP 16 1996

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

Dr. Alice Walker, Ph.D.
Continental Sulfur Company
7500 San Felipe, Suite 410
Houston, Tx 77063

Dear Dr. Walker:

Subject: CSC Thiosperse/Thioben
EPA Registration No. 55429-4
Your submission of July 15, 1996

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

1. Submit and/or cite all data required for registration and reregistration of your product under FIFRA sec. 3(c) (5) and sec. 4 when the agency requires all registrants of similar products to submit such data.

2. Make the labeling change listed below on the label before you release the product for shipment:

- a. Place a box around the "User Safety Recommendations".
- b. Move the second paragraph to appear outside the box, following the misuse statement.
- c. The Agriculture Use Requirements should appear as a single box which would include the statement beginning "PPE required for early entry -----".

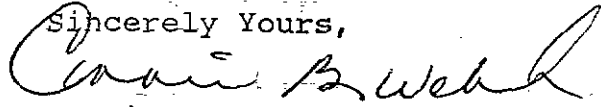
3. Submit five (5) copies of your final printed labeling before you release the product for shipment.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section

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6(e) . Your release for shipment of the product bearing the amended labeling constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for records.

Sincerely Yours,



Connie B. Welch
Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (7505C)

ACCEPTED
with COMMENTS
In EPA Letter Dated
SEP 6 1996
Under the Federal Insecticide,
Fungicide, and Rodenticide
Act as amended, for the pesticide
registered under EPA Reg. No.
55429-4

MAY BE DUSTED OR SPRAYED DIRECTLY ON CROPS.

ACTIVE INGREDIENT:

Sulfur..... 80.0%

INERT INGREDIENTS:..... 20.0%

TOTAL 100.0%

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.

See side/back panel for additional "Precautionary Statements."

EPA Reg. No. 55429-4

EPA Est. No. 55429-TX-1

Manufactured by: **Continental Sulfur Company**
7500 San Felipe, Suite 410, Houston, Texas 77063

Net Weight
lbs. (____kg)

PRECAUTIONARY STATEMENTS
CAUTION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear long-sleeved shirt and long pants, water-proof gloves, shoes plus socks, and goggles or face shield.

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.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

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.

ENVIRONMENTAL HAZARDS

Do not contaminate water by cleaning of equipment or disposal of equipment washwaters. For terrestrial uses, do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water. Do not apply when weather conditions favor drift from areas treated. Do not apply where run-off is likely to occur.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read the entire label before use. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation. Do not apply this product through any type of irrigation system.

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 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.

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, waterproof gloves, and shoes plus socks, and goggles or face shield.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store product in its original labeled container in a cool, dry, locked place out of reach of children.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

APPLICATION INSTRUCTIONS

Apply through any type of handheld, knapsack, mechanical, or pneumatic spraying equipment.

MIXING: Pour the required amount of CSC THIOSPERSE/THIOBEN into the indicated amount of water while stirring. CSC THIOSPERSE/THIOBEN disperses instantly.

DILUTE APPLICATION

GROUND: Specified rate in 20 to 60 gallons of water per acre.

ORCHARD: Specified rate in 100 to 800 gallons of water per acre.

CONCENTRATED APPLICATION

GROUND: Specified rate in 5 to 10 gallons of water per acre.

ORCHARD: Specified rate in 20 to 100 gallons of water per acre.

AERIAL APPLICATION

GROUND: Specified rate in 3 to 20 gallons of water per acre.

ORCHARD: Specified rate in 10 to 20 gallons of water per acre.

COMPATIBILITY

CSC THIOSPERSE/THIOBEN is completely compatible with Bordeaux mixture, copper fungicides, liquid fertilizers and all organic fungicides, insecticides, acaricides, and herbicides.

TO USE AS A SPRAY

Select a suitable hand sprayer or power unit which uses a ground rig or aerial applicator. Measure the recommended amount for the specific spray problem separately into water and stir to make a thin slurry paste. Fill the spray tank 1/2 full and then add the sulfur slurry to the tank before other materials are added. When using a suitable approved wetting agent, add it to the tank last to avoid possible foaming. Keep spray mixture agitated while spraying. Mix only the amount of spray needed for the job.

TO USE AS A DUST

Choose a suitable hand or power duster as needed, or select a certified ground or aerial applicator who uses specialized dusting equipment designed to deposit the dust on all plant surfaces. For best results, apply when wind velocity is below 5 mph. Observe precautions concerning use on sulfur sensitive plants and temperatures at the time of application.

WHEN TO USE: Apply to crops as needed in season when mites or diseases first appear and when insect buildup and plant disease damage are imminent. Repeat as directed for continued control. Contact your State Agricultural Extension Service for crop spray or dusting schedules which give the proper timing for applications in your locality.

HOW MUCH SPRAY OR DUST TO USE

Apply the lower recommended rate during periods of minimal to moderate disease or insect infestation, for regular season cover sprays, and when temperatures are in the high 80's and low 90's.

Apply the higher recommended rate when mites or diseases are damaging the crop, when weather conditions are favorable for their continued damage, and when temperatures are below and will not exceed 90°F within the following 3 days after the application.

(Continued on back label)

RECD EPA/01 P/DPD2

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USE PRECAUTIONS

In order to obtain effective mite and disease control, both the upper and lower sides of plant foliage and fruit must be thoroughly covered with spray solution. Poor spray coverage will result in poor mite and disease control. When growing crops for processing, consult the processor before applying sulfur. Do not use on any crop unless sulfur has been shown to be safe for that crop in your locality. Sulfur may burn foliage when temperatures exceed 90°F. Sulfur will cause severe fruit and leaf injury to sensitive plants. Do not use on or allow product to drift to apricots, d'anjou or comice pears, cranberries, filberts, spinach, tung trees, and other sensitive plants. Do not apply within 14 days of oil spray for all crops except citrus. **FOR CITRUS, do not apply within 21 days of an oil spray.**

AS A SPRAY OR DUST FOR FRUIT

ALMONDS, CHERRIES, PLUMS, PRUNES: For BROWN ROT, POWDERY MILDEW, LEAF SPOTS, SCAB (almonds only), RUST (prunes only), SILVER MITES, FLAT MITE, RED SPIDER MITES Use 4 to 30 lbs. per acre. Apply at bloom or early petal fall; repeat as necessary, usually 10 to 14 day intervals or after periods of wet weather for disease control. For BROWN ROT and PRUNE ROT on plums and prunes, use 34 to 40 lbs. per acre 5 weeks before harvest. Repeat every 7 days if wet weather prevails and disease threatens during the harvest period.

APPLES, PEARS: For POWDERY MILDEW, SCAB, BLISTER MITES, SILVER MITES, and SPIDER MITES Use 4 to 30 lbs. per acre. Apply pre-bloom and petal fall. Apply with cover sprays as needed throughout the season. For SCAB use 34 to 40 lbs. per acre at green tip and again at pink bud. Pink bud treatments will also control powdery mildew. Do not apply during or shortly before frost conditions. Sulfur may injure certain varieties of apples. Check specific varietal tolerance to sulfur prior to use. **PEARS ONLY:** Do not apply after fruit begins to turn down.

AVOCADO: For BROWN MITES, apply 2 to 30 lbs. per acre. Apply at first sign of mite build-up and repeat for control as needed or at 10 to 14 day intervals.

BLACKBERRIES, BLUEBERRIES, BOYSENBERRIES, DEWBERRIES, GOOSEBERRIES, HUCKLEBERRIES, RASPBERRIES, LOGANBERRIES, CURRANTS, and STRAWBERRIES: For POWDERY MILDEW (*Sphaerotheca humuli*) Apply each week starting at first bloom color with 3 to 15 lbs. per acre. Continue at 10 to 14 day intervals until fruit is set; then repeat as necessary and as weather conditions require.

BLACKBERRY (Rubus spp.): For RED BERRY MITE (*Acalitus essigi*) **AS A SPRAY,** apply 3 to 15 lbs. per acre. Start applications in early bud swell and repeat applications as necessary for mite control.

CITRUS: AS A DUST for SIX-SPOTTED MITE and CITRUS RUST MITE, use 56 to 90 lbs. per acre; for CITRUS FLAT MITE use 90 to 112 lbs. per acre as needed. For YUMA MITE use 112 lbs. per acre. For CITRUS THRIP use 112 lbs. per acre in mid March, petal fall, and again 2 to 4 weeks later. Do not apply within 21 days of an oil spray.

CITRUS (GRAPEFRUIT, LEMONS, LIMES, ORANGES, TANGELOS, TANGERINES, CITRUS CITRON, KUMQUATS, and hybrids of these): For FLAT MITES, SIX-SPOTTED MITES, RUST MITES, SILVER MITES, and SPIDER MITES **AS A SPRAY,** use 5 to 30 lbs. per acre. Limit to one application per season where supplemental rust mite control is needed between main sprays; otherwise, apply in any spray NOT CONTAINING OIL as needed for control during season or within 3 weeks of an oil spray as fruit burn may occur. Apply when mites are present in damaging numbers and repeat as needed or at 10 to 14 day intervals.

DATES: For BANKS GRASS MITE Apply 61 to 153 lbs. per acre. Apply higher rates by air. Thorough coverage is needed for good control.

FIG: For FIG RUST MITE Use 45 lbs. per acre in spring and again in the early summer.

GRAPES: For POWDERY MILDEW, BUD MITES, BLISTER MITES, and SPIDER MITES, Use 6 to 20 lbs. per acre. Apply in late dormant or with (1) cutworm spray, (2) in early shoot period, (3) then through season at 14 day cover spray intervals or with or without pesticides. Begin when shoots are 6, 12, and 18 inches long. Thereafter, repeat each 10 to 14 days to harvest. For RUST apply 17 to 22 1/2 lbs. per acre. Begin when new shoots are 6 inches long. Repeat before blossoms open and continue as necessary. Concord and other *Labrusca* type grapes may be injured by sulfur.

MANGOES: For control of POWDERY MILDEW, Apply 33 lbs. per acre before flowering and continue at intervals of 20 days.

OLIVES: For BUD MITES Use 2 lbs. per acre. Apply at the first sign of mite build-up and repeat for control as needed or at 10 to 14 day intervals.

PEACHES, NECTARINES: For BROWN ROT, POWDERY MILDEW, SILVER MITES, and SPIDER MITES Use 4 to 30 lbs. per acre. Apply at bloom or early petal fall. Repeat as necessary, usually 10 to 14 day intervals or after periods of wet weather for disease control. For RUST and POWDERY MILDEW use 56 lbs. after pit hardening. For SILVER MITE use 28 to 40 lbs. per acre after thinning. For BROWN ROT use 56 to 68 lbs. per acre 4 weeks pre-harvest and again 2 weeks later.

PISTACHIOS: For CITRUS FLAT MITE, Apply 61 lbs. per acre. Apply when mites first appear and repeat as necessary.

POMEGRANATES: For MITES, apply 61 lbs. per acre. Apply at first sign of mites and repeat as necessary.

WALNUTS: For control of PACIFIC MITE, ALMOND MITE, TWO-SPOTTED MITE and RED SPIDER MITE, Apply 22 1/2 lbs. per acre as required. CAUTION: Certain varieties of walnuts are sensitive to sulfur sprays under certain conditions. Do not apply unless the varieties are known to be tolerant of sulfur.

AS A SPRAY OR DUST FOR VEGETABLES

BEANS, PEAS, BROCCOLI, BRUSSELS SPROUT, CABBAGE, CAULIFLOWER, COLLARDS, MUSTARD GREENS, TURNIPS, RUTABAGAS, KALE and PEPPERS for POWDERY MILDEW, BEANS, BRUSSELS SPROUT, MUSTARD GREENS, TURNIPS, RUTABAGAS, PEAS, and PEPPERS for SPIDER MITES, and on BEANS for LEAF SPOT: Use 3 to 15 lbs. per acre. Start in the early leaf stage. Repeat application every 10 to 14 days with or without pesticides or immediately after a rain. Do not apply to varieties susceptible to sulfur injury. See section entitled "When to Use."

CARROTS, ONIONS, and GARLIC: PETROBIA MITE and POWDERY MILDEW Use 28 to 34 lbs. per acre as needed for control. See section entitled "When to Use."

CUCURBITS (CUCUMBERS AND SQUASH): For POWDERY MILDEW Apply 18 to 24 lbs. per acre. Do not apply when temperature exceeds 90°F or to varieties susceptible to sulfur injury. Repeat applications in 7 to 10 days if necessary.

MELONS: For POWDERY MILDEW, SPIDER MITES Apply 24 to 31 lbs. per acre. Do not apply to varieties susceptible to sulfur injury. Melon foliage is extremely sensitive to sulfur burn. Observe use precautions and apply only when temperatures are well below 90°F. See sections on "When to Use" and "How Much Spray or Dust to Use."

POTATOES: For control of POWDERY MILDEW, use 3 to 14 lbs. per acre. Apply at first sign of infection and repeat at 3 week intervals.

TOMATOES: RUSSET MITES Apply 3 to 30 lbs. per acre. Thorough coverage of upper and lower sides of leaves and fruit is required for effective control. Apply when mites are present in damaging numbers and repeat at 10 to 14 day intervals as needed. If crop is being grown with the aid of stakes or poles, apply 11 to 14 1/2 lbs. per acre per foot of average plant height. (Plants 4 ft. height = 45 to 58 1/2 lbs. per acre).

AS A SPRAY OR DUST FOR FIELD CROPS

ALFALFA: For POWDERY MILDEW and RUST, Use 24 to 30 lbs. per acre. Apply to stubble or when crop is not over 3-6 inches high or when disease appears. Repeat at 7-14 day intervals or as necessary. For PACIFIC, STRAWBERRY (Atlantic), and TWO-SPOTTED MITES, use 18 to 24 lbs. per acre. Apply when mites first appear and repeat as necessary. PRECAUTION: Sulfur may cause petal burn to open flowers.

CEREALS (CORN, WHEAT, BARLEY, OATS, RYE, AND SORGHUM): For control of RED SPIDER MITE, TWO-SPOTTED MITE, PACIFIC MITE, and ATLANTIC MITE, Apply 16 lbs. per acre when mites first appear and continue as necessary.

COTTON and SEED ALFALFA: MITES, apply 3 to 50 lbs. per acre. Apply when mites first appear to build up on new growth and damage to plants is imminent. Thorough spray coverage must be made to the upper and lower portions of all foliage. Use when first observed and before defoliation has occurred. Repeat as needed. On seed alfalfa, use when first observed in flower heads and before defoliation of more than the bottom leaves has occurred. Repeat as needed throughout seed set. May cause some flower burn. Use low rate on immature plants.

GRASS SEED CROPS: For control of TIMOTHY MITES Apply 36 lbs. per acre.

HOPS: For control of SPIDER MITES, use 2 to 6 lbs. per acre. Start applications in the early leaf stage and repeat as needed or at 10 to 14 day intervals.

PEANUTS: For POWDERY MILDEW, SPIDER MITES, and LEAF SPOT, apply 3 to 5 lbs. per acre. Start in the early leaf stage and repeat applications as necessary or at 10 to 14 day intervals.

SOYBEANS: For control of LEAF SPOT and POWDERY MILDEW Apply 14 lbs. per acre at early leaf stage and repeat every 14 days as necessary.

SPEARMINT, PEPPERMINT: For POWDERY MILDEW Apply 4 to 6 lbs. per acre when mint is 5-6" tall or when disease appears. Repeat twice at 30 day intervals. Do not apply within 30 days of harvest.

SUGAR BEETS: For POWDERY MILDEW and SPIDER MITES Apply 3 to 50 lbs. per acre. Apply at first signs of insects or disease. Repeat applications should be made at 10 to 30 day intervals or as necessary throughout the season. Under most disease conditions only one or two applications will be needed. Apply at the first signs of disease. Repeat at 7 to 10 day intervals. This product may be applied by ground or air. Use the higher rate when applying by air. The use of this product in hot weather over 90°F may cause foliage burn. See section entitled "How Much Spray or Dust to Use."

TABLE BEETS: For POWDERY MILDEW and RED SPIDER MITE Apply 3 to 5 lbs. per acre at 10 to 30 day intervals with or without other pesticides as soon as the first symptoms appear.

ORNAMENTALS

Use 2 to 50 lbs. per acre for POWDERY MILDEW of ALDER, AZALEA, BUTTON-BUSH, CATALPA, CHRYSANTHEMUM, DAHLIA, DELPHINIUM, HONEYSUCKLE, HORSE CHESTNUT, HYDRANGEA, LILAC, LINDEN, MATRIMONY VINE, PHLOX, RHODODENDRON, ROSE, STAGHORN SUMAC, SWEETPEA, SYCAMORE, TRUMPET VINE, WITCH HAZEL, ZINNIA and FOR RUSTS SPP. OF ASTER, CARNATION, CHRYSANTHEMUM, ROSE, AND SNAPDRAGON. Make full coverage applications on both sides of leaves. Begin before disease appears. Repeat at 7 to 10 day intervals. See section entitled "When to Use." Apply to plant foliage, stems and flowers to leave a barely visible dust residue. Do not over-apply during full sun nor during times when temperatures exceed 90°F.

USE AS A SOIL AMENDMENT FOR PH ADJUSTMENT

After checking with your local Cooperative Agricultural Extension Service, your soil requirements should be obtained from a soil sample analysis. Many soils will respond to an application of sulfur to decrease the pH (acidity). If soils are known to respond to this treatment and sulfur is recommended to amend the acidity, apply 1 to 2 lbs. of this product per 100 sq. ft. of soil surface. Do not apply more than 2 lbs. per 100 sq. ft. at one time. If more is needed, split the applications by applying the second increment in 6 to 8 weeks. For best results on small garden areas rake or till the sulfur into the top 4 to 6 inches of soil.

HOW MUCH TO USE ON SOIL

pH of soil	Pounds of sulfur per 100 sq. ft. of soil to change pH to 5.2		
	Sandy Soil	Loam Soil	Muck or Peat
7.0	2	3	6
6.5	1	2	5
6.0	1	2	4

For (pH) treatment of individual plants 4 to 5 feet in height, use 1 level tablespoonful per plant every 2 months. Do not apply sulfur during extremely hot (95° F) and humid days.

NOTICE: Continental Sulfur Company warrants that the chemical composition of this product conforms to the chemical description on the label and is reasonably fit for the purpose stated on the label when used in accordance with directions under normal conditions of use. Continental Sulfur Company makes no other warranties, express or implied, concerning the use of this product other than as indicated on the label. Buyer assumes all risks of use, storage or handling of this material not in strict accordance with directions given on the label.