

265226 / 310-18

Aug - 1990

Mr. Willard F. Cummings
Uniroyal Chemical Company
74 Amity Road
Bethany, CT 06525

Dear Mr. Cummings:

Subject: Add New Uses - Label Revision
Uniflow Sulfur
EPA Registration No. 400-363
Your Submission dated May 10, 1990

The amendment referred to above, submitted in connection with registration under section 3(c)(7)(A) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is acceptable provided that you:

1. Submit/cite all data required for registration/reregistration of your product under FIFRA section 3(c)(5) 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 Precautionary statements:
 - 1) Delete the sentence "Causes eye irritation."
 - 2) The last sentence should read "Remove contaminated clothing and wash before reuse."
 - b. In the Statement of Practical Treatment:
 - The "If On Skin" statement should precede the "If Inhaled" and "If In Eyes" statements.
3. The acute oral, acute dermal, eye irritation, skin irritation, and skin sensitization studies are acceptable.

54331:I:CR-44:Lewis:LR-12:KENCO:07/30/90:08/27/90:CL:VO:EK:DD

CONCURRENCES

SYMBOL							
SURNAME							
DATE							

4. The skin sensitization study is considered core minimum data because the induction scores for individual animals were not reported.

~~5. The acute inhalation study is classified as core supplementary~~
data. The mass median aerodynamic diameter and the exposure concentration do not comply with the requirements specified by the Agency guidelines. A memorandum by Dr. Stanley Gross on this matter is enclosed for your reference.

6. 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 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 your records.

Sincerely yours,

Susan Lewis
Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (H7505C)

Enclosures

UNIFLOW

CONTAINS 6 LBS. SULFUR PER GALLON

ACCEPTED
with COMMENTS
in EPA Letter Dated:

AUG 07 1990

Under the Federal Insecticide,
Fungicide, and Rodenticide Act as
amended, for the pesticide
registration.

**UNIROYAL
CHEMICAL**

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS **CAUTION**

Harmful if inhaled or absorbed through skin. Avoid contact with eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS

Do not apply directly to water. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

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

STORAGE AND DISPOSAL

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

STORAGE — Store in a dry location.

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

CONTAINER DISPOSAL — Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

COMPOSITION

Active Ingredient: (% by weight)	
Sulfur as S.	52.4%
Inert Ingredients:	47.6%
TOTAL:	100.0%

Contains 6.0 pounds Sulfur per gallon

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES: Flush eyes with plenty of water. Call a physician if irritation persists.
IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.
IF ON SKIN: Wash with plenty of soap and water. Get medical attention.
See side panel for additional precautionary statement.

UNIROYAL CHEMICAL COMPANY, INC.

Middlebury, CT 05749

EPA REG. NO. 400-383

EPA EST. NO.

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Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.
Do not enter treated areas for 24 hours unless appropriate protective clothing is worn.
Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.
Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written or oral warnings must include the following information:
"CAUTION" Area to be treated with SULFUR on (date of application). Do not enter without appropriate protective clothing until 24 hours after application.

PRODUCT INFORMATION

UNIFLOW SULFUR is a flowable sulfur formulation that may be applied as a ground or aerial application. Consult your State Agricultural Experimental Station or Extension Specialist for advice in selecting treatments from this label to best fit local conditions.

UNIFLOW SULFUR can be mixed and applied with liquid fertilizer or water. Do not combine with emulsifiable liquids except on dormant sprays or delayed dormant spray applications.

USE ONLY ON CROPS LISTED AND ONLY AS SPECIFIED ON THIS LABEL. EXCEPT ON COTTON, do not apply when temperatures are likely to exceed 90°F. Do not use sulfur with oil or within 28 days (for citrus 21 days) of an oil application unless in the dormant, delayed dormant, or post harvest application.

NOTE: Sulfur will cause severe fruit and leaf injury to sulfur-sensitive crops. Do not apply or allow to drift to apricots, d'Anjou and Comice pears, cranberries, sensitive varieties of cucurbits, filberts, spinach, tung trees, walnuts or other sensitive plants. Sulfur may burn foliage and fruit during periods of high temperatures and under certain climatic conditions.

UNIFLOW SULFUR is recommended to alleviate sulfur deficiency. It may be used by itself or with other products to maintain sulfur levels in crop foliage.

DIRECTIONS FOR USE

Use of this material in a manner other than in accordance with this label may cause serious plant, crop or personal injury, excessive residues, unsatisfactory control or other unintended consequences. Unless otherwise specified for specific tree fruits, dosage rates are given as amount of UNIFLOW SULFUR per 100 gallons water. Apply with adequate water to ensure thorough plant coverage. For best results apply during the early morning when the crop is not stressed for water.

UNIFLOW SULFUR is adaptable to spraying from all types of spray equipment. Use the appropriate rate of UNIFLOW SULFUR in the following spray volumes: for dilute, high volume sprays apply 25 to 100 gallons per acre (GPA) for most vegetable crops, 100 to 800 GPA for fruit orchards and up to 1500 GPA as may be required for large citrus groves; for concentrate ground sprays, use 5 to 20 GPA for most vegetable crops and 25 to 100 GPA for fruit and nut crops; for aerial spraying, 3 to 10 GPA are commonly used.

~~For aerial spray volumes, use 1 level tablespoon of Uniflow Sulfur per gallon of water. This is comparable to 8 pints per 100 gallons of water.~~

DIRECTIONS FOR MIXING BEFORE USING, STIR UNTIL SMOOTH

Add UNIFLOW SULFUR to partially filled spray tank. Agitate during filling and spraying. DO NOT STOP AGITATION WITH SULFUR IN SPRAY EQUIPMENT. When used with dormant oil, add oil when the tank is half full of water and maintain agitation until spraying is completed. The strong adhesive properties of UNIFLOW SULFUR act as a sticker on the plant, and the sticking characteristic necessitates the flushing of equipment with water after each day's use. Sulfur in any form is corrosive material. To reduce the effect, equipment should be flushed daily.

RECOMMENDATIONS
TREE FRUITS/NUTS

Unless otherwise specified for specific crops, dosage rates are given as pints of UNIFLOW SULFUR per 100 gallons water for use in a thorough coverage spray. Because of variations in the types of spray equipment used, a range of low and high rates is listed. This product should be applied by ground equipment, aircraft or sprinkler systems in sufficient water to provide thorough coverage. Do not use sulfur with oil or within 28 days (for citrus 21 days) of an oil application unless in a dormant, delayed dormant, or post harvest application.

ALMONDS:

~~European Blight~~

~~Pre-bloom through calyx sprays 1 1/2 to 3 1/2 pints~~
~~Cover Sprays 3/4 to 2 pints~~
~~during rain periods and repeat at 7 to 10 day intervals. Apply~~
~~2-3 pints per acre~~

APPLE, PEAR:

Scab:

Pre-bloom through calyx sprays 1 1/2 to 3 1/2 pints
Cover Sprays 3/4 to 2 pints

Powdery Mildew:

Pre-bloom through calyx sprays 1 to 3 pints
Cover Sprays 2 pints

~~European Blight~~ 2 to 3 pints

6 4
AVOCADO:

Brown Mite:

Apply 2 gallons of UNIFLOW SULFUR per acre in sufficient water for thorough coverage. Use as needed.

CHERRY, PLUM, PRUNE:

Brown Rot, Leafspot:

~~Pink and Bloom Sprays.....1 1/2 to 3 1/2 pints~~

Petal fall, shuck and cover sprays.....2/3 to 1 3/4 pints

~~Powdery Mildew, Red Spider:~~

~~Apply at bloom or early petal fall. Repeat as necessary, usually~~

~~every 14 days or after exposure to wet weather.....2 to 3 pints~~

CITRUS

Rust Mite, Clover Mite, Flat Mite, Two Spotted Mite, Red Spider Mite, Yum

~~Spider Mite, Sixspotted Mite:~~

Apply sprays ~~September~~ through May.....3/4 to 4 1/2 pints

Thrips(Early spring treatment for the reduction of Thrips population:

Apply 1 to 2 gallons per acre in sufficient water for thorough coverage. Make application after spring flush has made 3 to 4 inch growth. Repeat if necessary. Do not apply within 21 days of an oil application.

PEACH, NECTARINE:

Powdery Mildew, Brown Rot, Scab, ~~Peach Silver Mite~~

Pink and Bloom Sprays.....1 1/2 to 3 1/2 pints

Petal fall, shuck and cover sprays.....2/3 to 1 3/4 pints

Application to mature nectarines may cause discoloration.

PISTACHIO

Citrus Flat Mite

Apply 2 to 4 pints when mites first appear and repeat as necessary.

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FIELD AND VINE CROPS

For field and vine crop recommendations, the range of acceptable use rates reflects the amount of UNIFLOW SULFUR to be used depending upon individual crop disease control needs. Unless otherwise specified for specific crops, dosage rates are given as pints of UNIFLOW SULFUR per acre. This product should be applied by ground equipment, aircraft or sprinkler irrigation systems in sufficient water to provide thorough coverage.

Consult the State Agricultural Extension Service or State Agricultural Experiment Station for specific information on rates, timing and number of applications for the area.

Sprinkler Irrigation Water: Use recommended rate per acre by injecting into sprinkler system at or near the irrigation pump. For center pivot systems apply during the full revolution of the system. For portable or solid set systems, apply during the final 15 minutes of the irrigation period. Do not operate irrigation system after application until deposit has thoroughly dried. Apply the product through systems containing: 1) anti-siphon and check valves which will prevent water source contamination and overflow of the slurry tank and 2) interlocking controls between the metering device and the water pump to insure simultaneous shut off. See CHEMIGATION section on side panel for additional use directions and precautions.

PALFADPA: For control of Red spider mite apply 4 to 8 pints per acre.

POTATOES, BEANS, PEAS, BROCCOLI, BRUSSELS SPROUTS, CABBAGE, CAULIFLOWER, COLLARD, KALE, TABLE BEET, MUSTARD GREENS, RUTABAGA, TURNIPS, ~~PARSNIPS~~. For control of Powdery mildew, Septoria leaf spot, Red spider mite apply 4-8 pints of Uniflow Sulfur per acre. Start at early leaf stage. Repeat application every 10 to 14 days with or without pesticides immediately after a rain.

RASPBERRIES, BLUEBERRIES, BOYSENBERRIES, CURRANTS, DEWBERRIES, GOOSEBERRIES, HUCKLEBERRIES, LOGANBERRIES, RASPBERRIES, DEWBERRIES: To control Powdery Mildew use 4 pints per 100 gallons of water. Apply when disease first appears and repeat at 7 to 10 day intervals as necessary to maintain control.

~~ONIONS~~ and GARLIC: To control ~~Septoria blight~~ Powdery mildew use 4 pints per acre.

CORN, SMALL GRAINS, SORGHUM, SOYBEANS: For suppression of Red spider mite, Two-spotted mite, Grass banks mite and Pacific mite use 4 to 8 pints per acre. Apply when insect first appears and repeat as necessary or with the regularly scheduled insect program. For sulfur deficiency apply 2 to 4 pints per acre in at least 1 to 20 gallons of water. Application should be made early in the growing season. This treatment should be repeated if necessary. Low sulfur deficiency.

CUCURBITS: Sulfur Deficiency: Do not apply to sulfur sensitive varieties of cucumbers, watermelons, cantaloupes and squash. Never apply more than 1 pint per acre per application and never apply when temperatures are over 90 F. Use a minimum of 5 to 25 gallons of water per acre when spraying through a conventional sprayer. For best results spray when the crop is in a natural growing state after irrigation or natural rain fall. Spray early in the morning or late afternoon. Mid-day sprays may not be effective because of excessive moisture evaporation.

GRAPES: Powdery Mildew: Use 1 to 2 pints per 100 gallons water, maximum of 8 pints UNIFLOW SULFUR per acre in spring and summer. Make first application when shoots are 6 to 8 inches long, second when shoots are 12 to 15 inches long, and third at about bloom stage. The timing, rate and number of applications will vary with local conditions. Consult your local Agricultural Extension Service for specific information.

(**ANGOS:** For control of Powdery mildew apply 8 pints per acre. Begin before bloom. Repeat in bloom, after fruit set and 3 weeks later or as necessary.

WILSONS: For control of Powdery mildew: 1 pint per acre. Begin treatments when the crop is in bloom. Do not use on sulfur sensitive varieties.

PEANUTS: For rust use 2 to 4 pints per acre in enough water for good coverage. Begin 40 to 60 days after planting. Use 7 to 14 day intervals as long as needed to control rust.

PEAS - Sulfur Deficiency: Use 2 to 4 pints per acre starting at late bud to early bloom stage. Repeat in 10 to 14 days.

PASTURE, FIELD AND GRAIN CROPS -Sulfur Deficiency: Use 2 to 4 pints per acre in at least 1 to 20 gallons of water. Application should be made early in the growing season. This treatment should be repeated if crops continue to show sulfur deficiencies.

acre, by air or ground, in sufficient water to insure thorough coverage. Apply when first sign of infection appears or when plants have 4 to 5 leaves, followed by additional sprays at 2 to 3 week intervals, until pink bud stage or 4 weeks before harvest. After harvest, apply when infection appears or when plants have 4 to 5 leaves and repeat at 2 to 3 week intervals, as often as ~~necessary to cover new growth or until growth ceases in the field.~~ Before applying on a crop to be harvest^{ed} for oil, authorization should be obtained for the buyer of the oil.

STRAWBERRIES: Powdery Mildew: Use 2 pints. Apply at first sign of infection and repeat at 3 week intervals. For strawberries that will be canned, discontinue application of sulfur well before harvest in accordance with local canners recommendations.

SUGAR BEETS: For control of Powdery Mildew, use 4 to 8 pints UNIFLOW SULFUR per acre in 5 to 10 gallons of water for applications by air or in 10 to 20 gallons of water for ground applications. Apply at the first sign of infection and repeat at 10-30 day intervals or as necessary throughout the season. Under most disease conditions only one or two applications will be needed.

TOMATOES: Tomato russet mite: Use 4 to 8 ~~pints~~ per acre depending upon size of plants. Use full coverage sprays.

TURF GRASS: Sulfur Deficiency, Control of Soil pH: Apply 1 pint in 10 gallons of water per 1000 sq. ft. Begin applications in early spring and make 4 treatments per year. Do not exceed 1 pint per 1000 sq. ft. per application. (Note: Researchers have indicated that sulfur in some instances can be used to suppress Poa Annua populations and Fusarium patch disease.)

~~NAME~~

For small spray volumes, 2 1/2 level tablespoons of Uniflow Sulfur per gallon of water is comparable to 8 pints per 100 gallons of water.

For ornamentals use 1-2 tablespoons Uniflow Sulfur per gallon of water (comparable to 2-4 lbs active sulfur per 100 gallons of water), ensuring complete plant coverage. Begin when disease first appears and repeat at 5 to 10 day intervals.

ORNAMENTAL

Aster, Carnations

Disease Controlled
Powdery Mildew

Calendula, Cherry Laurels, Chrysanthemums
Hollyhock, Smilax

Leaf Spot, Powdery Mildew

Clematis, Columbine, Ivy (English), Laurel,
Petunia, Sage

Leaf Spot

Cosmos, Crepe Myrtle, Dahlia, Delphinium,
Gladiolus, Ligustrum, Sunflowers, Sweet Peas,
Violets, Zinnias

Powdery Mildew

Roses

Powdery Mildew, Black Spot

10
12
8

**CHEMIGATION
USE DIRECTIONS AND PRECAUTIONS**

In addition to the above DIRECTIONS FOR USE and DIRECTIONS FOR MIXING, the following precautions must be observed when using this product in a sprinkler irrigation system.

Apply this product only through sprinkler (including center pivot, lateral move, end tow, side wheel roll, traveler, big gun, solid set, or hand move) irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

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.

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.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

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.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

FOR CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS:

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems, must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must 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.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

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.

Do not apply when wind speed favors drift beyond the area intended for treatment.

IMPORTANT NOTICE — Seller warrants that this product conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with the directions and instructions specified on the label under normal conditions of use, but neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product, contrary to label instructions, or under abnormal conditions, or under conditions not reasonably foreseeable to seller, and buyer assumes the risk of any such use.