

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

5430271/300
18

Ms. Charlotte A. Sanson
BASF Corporation
Agricultural Products
P.O. Box 13528
Research Triangle Park, NC 27709

Dear Ms. Sanson:

Subject: Kumulus DF Fungicide
EPA Registration Number 7969-61
Your Submission Dated November 13, 1992

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable, provided that you:

1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

a. Under Environmental Hazards, change the first sentence to " Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark".

b. Under almonds, cherries, plums, prunes and pecans, clarify the diseases intended. Change " brown rot " to " brown rot blossom blight " for almonds, cherries, plums and prunes. This disease does not occur on pecans. If fruit brown rot is intended for the stonefruit and almonds, include specific directions for this use. Indicate the specific leaf spots intended to be controlled and associate the disease with the crop on which it occurs and for which control is intended.

c. Under peaches and nectarines, change " brown rot " to " brown rot blossom blight ". If control of fruit brown rot is intended, include specific directions for this use.

CONCURRENCES							
SYMBOL	725A5C						
SURNAME	B. HANSBESS						
DATE	1/27/93						

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

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

Sincerely yours,

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

Enclosure

BASF

ACCEPTED
with COMMENTS
in EPA Letter Dated:

JAN 27 1993

Under the Fungicide, Acaricide, and Insecticide Registration Act, No. 7969-61

KumulusTM DF

fungicide

Fungicide/Acaricide

Water dispersible sulfur granule:

Active ingredient	
Sulfur	80%
Inert ingredients	20%
Total	100%

EPA Reg. No. 7969-61

KEEP OUT OF REACH OF CHILDREN.

CAUTION

Statement of practical treatment

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

If splashed in eyes: Get medical attention if irritation develops.

If spilled on skin: Immediately remove contaminated clothing including shoes and wash skin with soap and plenty of water. If irritation develops, send for a physician.

Precautionary statements

Hazards to humans and to domestic animals.

Caution: Harmful if swallowed, avoid breathing spray mist.

Avoid contact with eyes, skin and clothing.

Wash thoroughly with soap and water after handling.

Environmental hazards

Do not apply directly to water or swamps, bogs, marshes and potholes. Do not contaminate water when disposing of rinsate or equipment washwaters. Do not apply when weather conditions favor drift from treated areas.

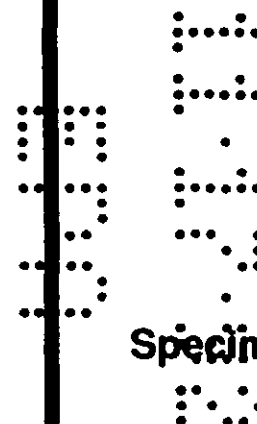
Net contents 50 lbs.

EPA Est. No. 7969-WG-01

Made in Germany.

BASF Corporation

P.O. Box 13528, Research Triangle Park, NC 27709



Specimen Label

BEST AVAILABLE COPY

Re-entry statement

Do not enter into treated area until at least 24 hours after the completion of application to the area unless wearing the protective clothing listed below. During early re-entry into treated areas (less than 24 hours after the completion of application) to perform hand labor tasks, wear long pants (or coveralls), long-sleeved shirt, shoes, socks, chemical/water-resistant gloves, goggles or face shield.

Pesticide handlers: During mixing, loading and application of this product, wear long pants (or coveralls), long-sleeved shirt, shoes, socks, chemical/water-resistant gloves, and goggles or face shield.

Because certain states may require more restrictive re-entry 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. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers.

When oral warnings are given, warnings shall be given in a language customarily understood by workers and must indicate the

specific period of time that treated areas may not be entered without protective clothing. Oral warnings must also include appropriate first aid instructions in case of accidental exposure. These instructions are given in the **Statement of practical treatment** at the beginning of this label. Written warnings must include the following information, "CAUTION. Area treated with **Kumulus DF fungicide** on (date of application). Do not enter without appropriate protective clothing for 24 hours (or other re-entry interval if your State has a more restrictive interval for this product). If accidental exposure occurs, follow the instructions below."

(Written warnings must include the **Statement of practical treatment** given at the beginning of this label.)

Directions for use

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

General

Do not apply to or allow spray drift on sulfur sensitive plants such as D'anjou pears, apricots, chrysanthemums, cranberries, spinach or other sensitive crops listed on this labeling. Sulfur may burn foliage when temperature is excessively high. Do not apply if temperatures during or within three days after

application are expected to exceed 90°F in the area to be treated. Do not apply with or following an oil application for 21 days. Do not apply oil for 21 days following treatment. When growing crops for processing, consult the processor before applying sulfur. Do not apply **Kumulus DF** through any type of irrigation system.

Dilute ground application

A-Orchard application—Apply specified rate in 100 to 800 gallons of water per acre.

B-All other applications—Apply specified rate in 20 to 60 gallons of water per acre.

Concentrate ground application

A-Orchard application—Apply specified rate in 20 to 100 gallons of water per acre.

B-All other applications—Apply specified rate in not less than 5 gallons of water per acre.

Aerial application

A-Orchard rates—Should not be applied in less than 10 gallons of water per acre.

B-All other applications—Apply specified rate in 5 to 20 gallons of water per acre.

Recommendations: Pour needed amount of **Kumulus DF** into spray tank under agitation. If necessary, add a few drops of oil to avoid foaming.

Crop	Problem	Lbs. per Acre
Almonds, cherries, plums, prunes, pecans	Brown rot, Powdery mildew, Leaf spot, Silver mite, Flat mite, Red spider mite.	10-20
Apply at bloom or early petal fall. Repeat as necessary, usually 10-14 days or after a period of wet weather.		
Apples, pears	Powdery mildew, Scab, Blister mite, Red spider mite	10-20
Do not apply to D'anjou pears or to sensitive apple varieties such as Ontario or Cox orange. Apply pre-bloom and petal fall. Apply with cover sprays throughout the season at 10-14 day intervals.		
Asparagus*	Rust	10-30
Use after cutting stops. Irrigate and cultivate before applying Kumulus DF . Repeat at 7 to 10 day intervals through the fern growth season.		
*Not registered in California.		
Avocados	Brown mite	10-30
Apply when mites are first noticed.		
Beans, peas, broccoli, brussels sprouts, cabbage, cauliflower, collards, kale, peppers, potatoes, mustard greens, rutabagas, turnips	Powdery mildew, Septoria leaf spot, Red spider mite	3-5
Start at early leaf stage. Repeat application every 10-14 days with or without other pesticides immediately after a rain.		

Crop	Problem	Lbs. per Acre
Blackberries, boysenberries, dewberries, loganberries, raspberries (<i>Rubus</i> spp.)	Powdery mildew	6-12
Begin when new shoots are 6-inches long and before blossoms open. Repeat at 10 day intervals or as necessary.		
Blueberries, gooseberries, currants, huckleberries	Powdery mildew	6-15
Begin when disease first appears. Repeat at 7 to 10-day intervals or as necessary.		
Carrots, onions, garlic	Petrobia mite and Powdery mildew	3-10
Begin when the disease first appears and repeat as needed.		
Citrus	Rust mite , Flat mite, Silver mite, Red spider mite	8-20
Apply in any spray not containing oil . Do not apply within 21 days of an oil application		
Corn, small grains, sorghum, soybeans	Suppression of Red spider mite, Two-spotted mite, Grass banks mite and Pacific mite; for control of the Atlantic mite (small grain only) and for control of Powdery mildew	6-15
Apply when disease first appears and repeat as necessary or with the regularly scheduled insecticide program.		
Cotton, seed alfalfa	Red spider mite	3-5
Grapes	Powdery mildew, Bud mite, Blister mite, Red spider mite	2-5
Apply in late dormancy or with cutworm spray, early shoot period and through season on 14-day schedule or with other pesticides.		
Mangoes	Powdery mildew	10-30
Begin before bloom. Repeat in bloom, after fruit set and 3 weeks later or as necessary.		
Melons	Powdery mildew	20-25
Treat when the disease first appears and repeat as necessary. Sulfur can injure plants, especially when the temperature reaches 95°F. Do not use on sulfur-sensitive varieties.		
Peaches, nectarines	Brown rot, Powdery mildew, Silver mite, Red spider mite	10-20
Apply at bloom or early petal fall. Repeat as necessary, usually 10-14 days or after a period of wet weather.		
Peanuts	Powdery mildew, Red spider mite, Leaf spot	3-5
Start in early leaf stage. Repeat applications as necessary, usually 10-24 days.		
Strawberries	Powdery mildew, Red spider mite	5-10
Start in early leaf stage, repeat applications at 10-14 day intervals with or without other pesticides. For Powdery mildew, begin at first signs of disease and repeat as necessary.		
Sugar beets	Red spider mite, Powdery mildew	10-20
Apply at first indication of problem with or without other pesticides. Repeat as necessary.		
Table beets	Red spider mite, Powdery mildew	3-5
Apply at first indication of problem with or without other pesticides. Repeat as necessary.		
Tomatoes	Russet mite	10-20
Thorough coverage is required.		
Walnuts	European red mite, Pacific mite, Almond mite, Two-spotted mite, Red spider mite	10-20
Apply with mite sprays during season to increase the effectiveness of miticides.		
Note to user: 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.		

• **Ornamentals**

Crop	Problem	Lbs. per Acre
Asters, carnations	Powdery mildew	3-5
Calendula, cherry laurels, hollyhock, simlax	Leaf spots and Powdery mildew	3-5
Clematis, columbine, ivy (English), laurel, petunia, sage	Leaf Spots	3-5
Cosmos, crepe myrtle, dahlia, delphinium, gladiolus, lingustrum, sunflowers, sweet peas, violets, zinnias	Powdery Mildew	3-5
Roses	Powdery mildew and Black spot	3-5

Apply 3-5 lbs. in 100 gallons of water. Ensure complete plant coverage. Begin when disease first appears and repeat at 5 to 10 day intervals.

Storage and disposal

Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. 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.

Conditions of sale and warranty

The Directions for use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed care-

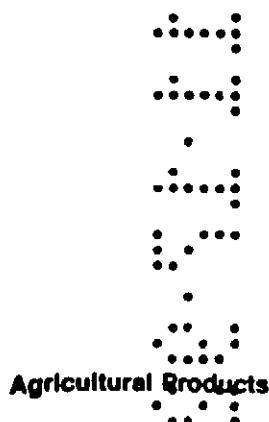
fully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. All such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for use, subject to the inherent risks referred to above.

BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. In no case shall BASF or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of sale and warranty which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

Kumulus is a trademark of BASF AG.
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KU 1 001 JJ8347 A0890692

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BASF Corporation
P.O. Box 13528
Research Triangle Park, NC 27709

BASF

JAN 2 1993

Ms. Charlotte A. Sanson
 BASF Corporation
 Agricultural Products
 P.O. Box 13528
 Research Triangle Park, NC 27709

Dear Ms. Sanson:

Subject: Kumulus DF Fungicide
 EPA Registration Number 7969-61
 Your Submission Dated November 13, 1992

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1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:

a. Under Environmental Hazards, change the first sentence to " Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark".

b. Under almonds, cherries, plums, prunes and pecans, clarify the diseases intended. Change " brown rot " to " brown rot blossom blight " for almonds, cherries, plums and prunes. This disease does not occur on pecans. If fruit brown rot is intended for the stonefruit and almonds, include specific directions for this use. Indicate the specific leaf spots intended to be controlled and associate the disease with the crop on which it occurs and for which control is intended.

c. Under peaches and nectarines, change " brown rot " to " brown rot blossom blight ". If control of fruit brown rot is intended, include specific directions for this use.

CONCURRENCES							
SYMBOL	72545C						
SURNAME	BCHAMBLISS						
DATE	1/27/93						

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

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

Sincerely yours,

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

Enclosure

3 7 6

ACCEPTED
with COMMENTS
in EPA Letter Dated:

JAN 27 1993

Under the Fungicide, Insecticide, and Plant Growth Regulator Act as amended, this product is registered under EPA Reg. No. 7969-61

BASF

KumulusTM DF

fungicide

Fungicide/Acaricide

Water dispersible sulfur granule:

Active ingredient	
Sulfur	80%
Inert ingredients	20%
Total	100%

EPA Reg. No. 7969-61

KEEP OUT OF REACH OF CHILDREN.

CAUTION

Statement of practical treatment

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

If splashed in eyes: Get medical attention if irritation develops.

If spilled on skin: Immediately remove contaminated clothing including shoes and wash skin with soap and plenty of water. If irritation develops, send for a physician.

Precautionary statements

Hazards to humans and to domestic animals.

Caution: Harmful if swallowed, avoid breathing spray mist.

Avoid contact with eyes, skin and clothing.

Wash thoroughly with soap and water after handling.

Environmental hazards

Do not apply directly to water or swamps, bogs, marshes and potholes. Do not contaminate water when disposing of rinsate or equipment washwaters. Do not apply when weather conditions favor drift from treated areas.

Net contents 50 lbs.

EPA Est. No. 7969-WG-01

Made in Germany.

BASF Corporation

P.O. Box 13528, Research Triangle Park, NC 27709

Specimen Label

Re-entry statement

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Pesticide handlers: During mixing, loading and application of this product, wear long pants (or coveralls), long-sleeved shirt, shoes, socks, chemical/water-resistant gloves, and goggles or face shield.

Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

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Directions for use

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

General

Do not apply to or allow spray drift on sulfur sensitive plants such as D'anjou pears, apricots, chrysanthemums, cranberries, spinach or other sensitive crops listed on this labeling. Sulfur may burn foliage when temperature is excessively high. Do not apply if temperatures during or within three days after

application are expected to exceed 90°F in the area to be treated. Do not apply with or following an oil application for 21 days. Do not apply oil for 21 days following treatment. When growing crops for processing, consult the processor before applying sulfur. Do not apply **Kumulus DF** through any type of irrigation system.

Dilute ground application

A-Orchard application—Apply specified rate in 100 to 800 gallons of water per acre.

B-All other applications—Apply specified rate in 20 to 60 gallons of water per acre.

Concentrate ground application

A-Orchard application—Apply specified rate in 20 to 100 gallons of water per acre.

B-All other applications—Apply specified rate in not less than 5 gallons of water per acre.

Aerial application

A-Orchard rates—Should not be applied in less than 10 gallons of water per acre.

B-All other applications—Apply specified rate in 5 to 20 gallons of water per acre.

Recommendations: Pour needed amount of **Kumulus DF** into spray tank under agitation. If necessary, add a few drops of oil to avoid foaming.

Crop	Problem	Lbs. per Acre
Almonds, cherries, plums, prunes, pecans	Brown rot, Powdery mildew, Leaf spot, Silver mite, Flat mite, Red spider mite.	10-20
Apply at bloom or early petal fall. Repeat as necessary, usually 10-14 days or after a period of wet weather.		
Apples, pears	Powdery mildew, Scab, Blister mite, Red spider mite	10-20
Do not apply to D'anjou pears or to sensitive apple varieties such as Ontario or Cox orange. Apply pre-bloom and petal fall. Apply with cover sprays throughout the season at 10-14 day intervals.		
Asparagus*	Rust	10-30
Use after cutting stops. Irrigate and cultivate before applying Kumulus DF . Repeat at 7 to 10 day intervals through the fern growth season.		
*Not registered in California.		
Avocados	Brown mite	10-30
Apply when mites are first noticed.		
Beans, peas, broccoli, brussol sprouts, cabbage, cauliflower, collard, kale, peppers, potatoes, mustard greens, radishes, turnips	Powdery mildew, Septoria leaf spot, Red spider mite	3-5
Start at early leaf stage. Repeat application every 10-14 days with or without other pesticides immediately after a rain.		

Crop	Problem	Lbs. per Acre
Blackberries, boysenberries, dewberries, loganberries, raspberries (<i>Rubus</i> spp.)	Powdery mildew	6-12
Begin when new shoots are 6-inches long and before blossoms open. Repeat at 10 day intervals or as necessary.		
Blueberries, gooseberries, currants, huckleberries	Powdery mildew	6-15
Begin when disease first appears. Repeat at 7 to 10-day intervals or as necessary.		
Carrots, onions, garlic	Petrobia mite and Powdery mildew	3-10
Begin when the disease first appears and repeat as needed.		
Citrus	Rust mite, Flat mite, Silver mite, Red spider mite	8-20
Apply in any spray not containing oil . Do not apply within 21 days of an oil application		
Corn, small grains, sorghum, soybeans	Suppression of Red spider mite, Two-spotted mite, Grass banks mite and Pacific mite; for control of the Atlantic mite (small grain only) and for control of Powdery mildew	6-15
Apply when disease first appears and repeat as necessary or with the regularly scheduled insecticide program.		
Cotton, seed alfalfa	Red spider mite	3-5
Grapes	Powdery mildew, Bud mite, Blist. mite, Red spider mite	2-5
Apply in late dormancy or with cutworm spray, early shoot period and through season on 14-day schedule or with other pesticides.		
Mangoes	Powdery mildew	10-30
Begin before bloom. Repeat in bloom, after fruit set and 3 weeks later or as necessary.		
Melons	Powdery mildew	20-25
Treat when the disease first appears and repeat as necessary. Sulfur can injure plants, especially when the temperature reaches 95°F. Do not use on sulfur-sensitive varieties.		
Peaches, nectarines	Brown rot, Powdery mildew, Silver mite, Red spider mite	10-20
Apply at bloom or early petal fall. Repeat as necessary, usually 10-14 days or after a period of wet weather.		
Peanuts	Powdery mildew, Red spider mite, Leaf spot	3-5
Start in early leaf stage. Repeat applications as necessary, usually 10-24 days.		
Strawberries	Powdery mildew, Red spider mite	5-10
Start in early leaf stage, repeat applications at 10-14 day intervals with or without other pesticides. For Powdery mildew, begin at first signs of disease and repeat as necessary.		
Sugar beets	Red spider mite, Powdery mildew	10-20
Apply at first indication of problem with or without other pesticides. Repeat as necessary.		
Table beets	Red spider mite, Powdery mildew	3-5
Apply at first indication of problem with or without other pesticides. Repeat as necessary.		
Tomatoes	Russet mite	10-20
Thorough coverage is required.		
Walnuts	European red mite, Pacific mite, Almond mite, Two-spotted mite, Red spider mite	10-20
Apply with mite sprays during season to increase the effectiveness of miticides.		
Note to user: 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.		

Ornamentals

Crop	Problem	Lbs. per Acre
Asters, carnations	Powdery mildew	3-5
Calendula, cherry laurels, hollyhock, similax	Leaf spots and Powdery mildew	3-5
Clematis, columbine, ivy (English), laurel, petunia, sage	Leaf Spots	3-5
Cosmos, crepe myrtle, dahlia, delphinium, gladiolus, lingustrum, sunflowers, sweet peas, violets, zinnias	Powdery Mildew	3-5
Roses	Powdery mildew and Black spot	3-5

Apply 3-5 lbs. in 100 gallons of water. Ensure complete plant coverage. Begin when disease first appears and repeat at 5 to 10 day intervals.

Storage and disposal

Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. 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.

Conditions of sale and warranty

The Directions for use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully.

However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. All such risks shall be assumed by the Buyer.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for use, subject to the inherent risks referred to above.

BASF MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. In no case shall BASF or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing Conditions of sale and warranty which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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KU 1 001 JJ8347 A0890692

BASF Corporation
P.O. Box 13528
Research Triangle Park, NC 27709

BASF