



U. S. ENVIRONMENTAL PROTECTION AGENCY
Office of Pesticide Programs
Registration Division (H7505C)
401 "M" St., S.W.
Washington, D.C. 20460

EPA Reg. Number:

55429-4

Date of Issuance:

MAY 3 1995

Term of Issuance: Conditional

Name of Pesticide Product:

CSC 80%
Thiosperse/Thioben

NOTICE OF PESTICIDE:
 X Registration
 Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Continental Sulfur Company
7500 San Felipe, Suite 410
Houston, Texas 77063

Notes: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data; and submit acceptable responses required for reregistration of your product under FIFRA section 4.
2. Make the following labeling change before you release the product for shipment:
 - a. Add the phrase "EPA Registration No. 55429-4".
 - b. Revise the label ingredients statement and product name to declare 82% active ingredient to conform to the submitted CSF or submit a revised CSF which declares 80% sulfur.
 - c. Based upon the review of the acute inhalation study for EPA Reg. No. 55429-1, which was referenced for this product (copy enclosed), revise the precautionary statements to "Harmful if absorbed through skin. Causes moderate eye irritation. Avoid contact with skin eyes or clothing. Wash thoroughly with soap and water after handling." Revise the

Signature of Approving Official:

Cornie B. Webb

Date:

5/3/95

statements of practical treatment to "If on skin: Wash with plenty of soap and water. Get medical attention. If in eyes: Flush eye with plenty of water. Call a physician if irritation persists."

- d. For the following crops, indicate whether dust or spray application is intended: dates, figs, mangoes, pistachios, pomegranates, walnuts, cucurbits, alfalfa, cereals, grass seed crops, soybeans, spearmint, peppermint and table beets. If sprays are intended, indicate the spray volume to be used.
- e. The uses of the product indicated under the product name include use as a pH adjuster. There are no directions for this use. Delete the use or provide appropriate directions.
- f. Under the PPE section of the label and for PPE listed for early entry, add "goggles or face shield". This is a requirement imposed by the Sulfur Reregistration Eligibility Document.
- g. Under Use Precautions, it states that the product must not be applied within 21 days of an oil spray for citrus, but under specific directions for citrus a 2 month interval is indicated. Make the appropriate correction to resolve this conflict.

3. Submit five copies of the final printed label for the record.

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



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

Enclosures

CSC 80% THIOSPERSE/THIOBEN

Micronized Wettable or Dusting Sulfur

For Use on Fruit and Nut Crops, Vegetables, Field and Row Crops,
Ornamental Turf and Flowers, and for Use as a pH Adjuster

May be dusted or sprayed directly on crops

ACTIVE INGREDIENT:

Sulfur..... 80%

INERT INGREDIENTS:..... 20%

Total 100%

RECEIVED
with COMMENTS
In EPA Letter Dated

MAY 3 1995

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

55429-4

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF ON SKIN: Wash with soap and water. Get medical attention if irritation persists.

IF IN EYES: Flush eyes with flowing water for at least 15 minutes. Get medical attention if irritation persists.

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

EPA Reg. No. 55429-

EPA Est. No. 55429-TX-1

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

Net Contents
_____ Lbs.

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

May be harmful if swallowed, inhaled, or absorbed through the skin. Avoid inhalation of vapors, spray, or dust. Avoid contact with eyes, skin, and clothing.

PERSONAL PROTECTIVE EQUIPMENT

Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

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.

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.

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 mites, red spider mites as a **spray**, use 4 1/2 to 6 3/4 lbs. per 100 gallons of water for ground applications. Use 11 to 34 lbs. in 15 to 20 gallons water per acre for aerial application. 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. As a **dust** for brown rot on cherries, use 45 to 56 lbs. per acre applied 2 to 3 weeks before harvest. 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 as a **spray**, use 4 1/2 to 6 3/4 lbs. per 100 gallons water for ground applications. Use 11 to 34 lbs. in 15 to 20 gallons water per acre for aerial application. Apply pre-bloom and petal fall. Apply with cover sprays as needed throughout the season. As a **dust** 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: As a **spray** for brown mites, apply 2 1/4 to 6 3/4 lbs. per 100 gallons of water for ground applications. Use 11 to 34 lbs. in 15 to 20 gallons water per acre for aerial application. 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*) as a **spray**, apply each week starting at first bloom color with 3 3/8 to 5 5/8 lbs. per 100 gallons of water. Continue at 10 to 14 day intervals until fruit is set; then repeat as necessary and as weather conditions require. As a **dust** for powdery mildew, use 17 to 22 1/2 lbs. per acre during the preharvest season. See section entitled "When to Use."

BLACKBERRY (*Rubis spp.*): For red berry mite (*Acalitus essigi*) as a **spray**, apply 3 3/8 to 5 5/8 lbs. per 100 gallons of water. Start applications in early bud swell and repeat applications as necessary for mite control. As a **dust**, use 17 to 22 1/2 lbs. per acre and apply as for spray.

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 2 months 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 5/8 to 11 lbs. per 100 gallons of water for ground applications. Use 11 to 34 lbs. in 15 to 20 gallons water per acre for aerial application. For Florida citrus rust mite, use 28 lbs. per 500 gallons water equal to 40 to 50 lbs. sulfur per acre for ground applications. Use 45 to 56 lbs. in 15 to 20 gallons of water per acre for aerial application. 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 by ground or air. 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, as a spray use 2 1/4 to 6 3/4 lbs. per 100 gallons of water. 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. As a dust for powdery mildew use 17 to 22 1/2 lbs. per acre 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 3/4 lbs. per acre before flowering and continue at intervals of 20 days.

OLIVES: For bud mites as a spray use 2 1/4 lbs. per 100 gallons of water. 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 as a spray, use 4 1/2 to 6 3/4 lbs. per 100 gallons of water for ground applications. Use 11 to 34 lbs. in 15 to 20 gallons water per acre for aerial application. 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. As a dust for powdery mildew, use 56 lbs. per acre at petal fall, 2 weeks later, and again at beginning of pit hardening. 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 by air or ground. 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. As a spray use 3 3/8 to 5 5/8 lbs. per acre in 15 or 50 gallons water aerial or ground application

respectively. Start in the early leaf stage. Repeat application every 10 to 14 days with or without pesticides or immediately after a rain. As a dust for powdery mildew and spider mites, use 17 to 22 1/2 lbs. per acre. Do not apply to varieties susceptible to sulfur injury. See section entitled "When to Use."

CARROTS, ONIONS, and GARLIC: As a spray for petrobria mite, apply 24 to 37 lbs. per acre during warm weather. For control of petrobria mite and powdery mildew as a dust, 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 1/2 to 24 1/2 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: As a spray for powdery mildew, apply 24 to 31 lbs. per acre. For spider mites, apply 36 to 61 lbs. per acre. As a dust for powdery mildew use 17 to 23 lbs. per acre. For spider mites use 22 1/2 to 45 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 1/2 to 4 1/2 lbs. in sufficient water to cover one acre. By air use a minimum of 8 gallons of spray per acre. With ground equipment use a minimum of 10 gallons of spray per acre. Apply at first sign of infection and repeat at 3 week intervals.

TOMATOES: As a spray for russet mites, apply 3 1/2 to 5 1/2 lbs. in sufficient water (15 gals. minimum for aerial application and 50 gallons minimum for ground rig) to treat an 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. As a dust for control of russet mite, use 34 to 45 lbs. per acre. 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 1/2 to 30 1/2 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 1/2 to 24 1/2 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: As a spray for spider mites, apply 3 1/2 to 5 1/2 lbs. per acre in 20 or 50 gallons of water by air or ground rig respectively. 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. As a dust on cotton for Atlantic mite, use 50 1/2 to 56 lbs. per acre when first observed and before defoliation has occurred. Repeat as needed. As a dust on seed alfalfa for Atlantic mite, use 17 to 45 lbs. per acre 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 1/4 to 6 3/4 lbs. per 100 gallons of water. 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 1/2 to 5 1/2 lbs. per acre in 15 or 50 gallons of water by air or ground rig respectively. 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 control, 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 as a spray, apply 3 1/2 to 5 1/2 lbs. per acre in 15 or 50 gallons of water by air or ground rig respectively. 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. As a dust for spider mites, use 50 1/2 to 56 lbs. per acre. For powdery mildew use 28 to 56 lbs. per acre. For Puccinia rust use 8 1/2 to 14 lbs. per acre. 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 control, 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

As a spray use 2 to 7 lbs. per 100 gallons of water and for use as a dust use 50 to 56 lbs. per acre for powdery mildew of alder, azalea, buttonbush, 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 or during times when temperatures exceed 90°F.

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.

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