



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

MAR 1 8 1994

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

RALPH P. BURTON ISK BIOTECH CORP. 5966 HEISLEY ROAD BOX 8000 MENTOR, OH 44061

Subject:

Label Amendment Submission of 9/10/93 in Response to PR Notice 93-7

EPA REG. NO. 50534-159

BRAVO S

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is accepted. A copy of your proposed labeling stamped "ACCEPTED WITH COMMENTS" is enclosed.

WHAT THIS ACCEPTANCE MEANS:

Based on your certification, the Agency has accepted the labeling changes that are necessary to comply with the Worker Protection Standard (WPS) labeling requirements of 40 CFR part 156, subpart K, described in PR Notices 93-7 and 93-11. Any other labeling changes submitted in connection with this amendment application but not directly related to compliance with the WPS have not been reviewed or accepted by the Agency. If you wish to make such changes, you must submit a separate amendment application proposing them. If your product is currently suspended, the acceptance of this labeling amendment does not affect the suspension in any way.

WHAT YOU NEED TO DO NEXT:

Send to EPA one (1) copy of the final printed labeling:

- BEFORE selling or distributing any product bearing the final printed labeling AND
- WITHIN one year from date of this acceptance.

Submit the final printed labeling via the U.S. Postal Service to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs (7505C)
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460-0001

Hand or courier deliveries of final printed labeling may be made to:

Document Processing Desk (FIN-LABEL)
Office of Pesticide Programs
Room 266A, Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Sincerely

Jim Tompkins, Deputy Chief Registration Support Branch Registration Division (7505W)

Attachment

24 2' 50584-151

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Office of Pesticide Programs Registration Division

Ralph P Burton ISK BIOTECH CORP 5966 HEISLEY ROAD BOX 8000 MENTOR OH 44061

Comment for: EPA Reg Nr.50534-159 BRAVO S

The following specific comments pertain to your WPS labeling submission concerning the product cited above:

No comment.

BEST AVAILABLE COPY

Net Contents: 5 Gallons

ISK·BIOTEC

Agricultural Fungicide/Miticide with Adjuvants

Contains 2.96 Pounds Sulfur and 2.08 Pounds Chlorothalonil Per Gallon

Active Ingredient:

Sulfur Chlorothalonil (tetrachloroisophthalonitrile)* 19.1%

Inert Ingredients: 53.6%

*Covered under U.S. Patent No. 3,948

Keep Out of Reach of Children CAUTION: See side panel for additional precautionary statements

ISK Biotech Corporation 5966 Heisley Road, P.O. box 8000 Mentor, Ohio 44061-8000

EPA Reg. No. 50534-159

EPA Est. No. 37429-GA-1

If Swallowed: Give one or two glasses of water and induce vomiting by touching finger to the back of the throat.

if on Skin: Wash thoroughly with soap and water.

If In Eyes: Immediately flush eyes with plenty of water for 15 minutes. Call a physician.

Do not apply this product in such a manner as to directly, or—
through drift, expece workers or other persons. The eres—
being treated must be vacated by unprotected persons.—

May produce temporary allergic side effects characterized by redness of the eyes, mild bronchial irritation and redness or rash on exposed skin area. Persons having allergic reaction should contact a physician.

Note to Physician: Persons having an altergic reaction respond to treatment with antihistamines or steroid creams and/or systemic steroids.

Environmental Hazards

This product is toxic to fish, aquatic invertebrates, and marine/estuarine organisms. Flunoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not apply when weather conditions tavor drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

Apply only to areas specified on label.

A Broad Spectrum Agricultural Fungicide

Read entire label carefully and use only as directed.

General Information

Bravo S is an excellent fungicide combination when used according to label directions for control of a broad spectrum of plant diseases

Bravo S can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control. Do not combine Bravo S in the spray tank with pesticides, surfactants or fertilizers, unless your prior use has shown the combination physically compatible, effective and noninjurious under your conditions of use.

The sulfur in **Bravo S** may cause injury to plants if used improperly or under unfavorable weather conditions. During periods of high temperature sulfur may burn tokage. **Do not** make **Bravo S applications** at such times

Note: Sulfur will cause severe truit and leaf injury to sulfur sensitive crops. **Do not** apply or allow to drift to apricots, d'Anjou and Comice pears, cranberries, cucurbits (cucumbers, cantaloupes, melons, squash) liberts, spinach, tung trees, walnuts, or other sensitive plants.

DO NOT USE WITHIN FOUR (4) WEEKS OF AN OIL SPRAYING SULFUR IS HIGHLY CORROSIVE AND EQUIPMENT SHOULD BE CLEANED THOROUGHLY AFTER EACH DAY'S SPRAYING

Directions for Use

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

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

See attached folder for directions for use.

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited.

Storage. Store in a cool place. Protect from excessive heat. If frozen may generally be restored by thorough mixing after thawing. Repeated freezing-thawing cycles may impair utility.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, pesticide spray or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your state Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Disposal: Do not reuse empty container. 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 of smoke.

Warranty and Limitation of Damages

Seller warrants that this material conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use and Buyer assumes the risk of any use contrary to such directions. Seller makes no other express or implied warranty, including any other express or implied warranty of Fitness or of Merchantability, and no agent of Seller is authorized to do so except in writing with a specific reference to this warranty. In no event shall Seller's liability for any breach of warranty exceed the purchase price of the material as to which a claim is made.

ISK·BIOTECH"

Bravo S

Agricultural Fungicide/ Miticide with Adjuvants

Contains 2.96 Pounds Sulfur and 2 08 Pounds Chlorothalonil Per Gallon

Active Ingredient:

*Covered under U.S. Patent No. 3 948.636

Keep Out of Reach of Children CAUTION

See side panel for additional precautionary statements

3306-0000-8035-9208

A Broad Spectrum Agricultural Fungicide

Read entire label carefully and use only as directed.

General Information

Brave S is an excellent fungicide combination when used according to label directions for control of a broad spectrum of plant diseases.

Brave S can be used effectively in dilute or concentrate sprays. Thorough, uniform coverage is essential for disease control. De net combine Brave S in the spray tank with pesticides, surfactants or fertilizers, unless your prior use has shown the combination physically compatible, effective and nonknjurious under your conditions of use.

The sulfur in Bravo S may cause injury to plants if used improperly or under unfavorable weather conditions. During periods of high temperature sulfur may burn foliage. Do not make Brave S applications at such times.

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, cucurbits (cucumbers, cantaloupes, melons, squash) filberts, spinach, tung trees, walnuts, or other sensitive plants.

DO NOT USE WITHIN FOUR (4) WEEKS OF AN OIL SPRAYING. SULFUR IS HIGHLY CORROSIVE AND EQUIPMENT SHOULD BE CLEANED THOROUGHLY AFTER EACH DAY'S SPRAYING.

Precautionary Statement Hazards to Humans and Domestic Animals Caution

Causes eye and skin irritation. May skin sensitizer.

Do not get in eyes, on skin or on o goggles er lace chield when handle uet. Wash theroughly with coap ar handling. Remove contaminated e before reuse. Harmful if swallower ing spray mist. May cause irritatio or skin. Do not store near feed or

First Aid

M Swallowed: Give one or two glass and induce vomiting by touching fi back of the throat.

H on Skin: Wash thoroughly with :

N In Eyes: Immediately flush eyes water for 15 minutes. Call a physic

—De not apply this product in such a -directly, or through drift; expose w ...persons. The area being treated ma -by unprotected persons...

May produce temporary allergic sic characterized by redness of the eye bronchial irritation and redness or exposed skin area. Persons having reaction should contact a physician

Note to Physician: Persons having reaction respond to treatment with or steroid creams and/or systemic

Personal Protective Equipment (PPE):

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

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

This product is toxic to fish, aquatic invertebrates, and marine/estuarine organisms. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

Apply only to areas specified on label

Directions for Use

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

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. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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 enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 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, shoes plus socks, and protective eyewear.

Note to User: Wear goggles or face shield when handling this product. Wear long sleeve shirt, long pants and gloves while mixing, loading and applying this product. This product may produce temporary allergic side effects characterized by redness of the eyes, mild bronchial irritation and redness or rash on exposed skin areas. Persons having allergic reaction should contact a physician.

Reentry: Do not onter treated areas for 24 hours.

-Because <u>certain states</u> may require more...
- restrictive reentry intervals for various crops...
- treated with this product, consult your State...
- Department of Agriculture for further information.

Written Or orel warnings must be given to workerswho are expected to be in a treated area or in anarea about to be treated with this product. When-

- __nral_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. Oral and written warnings must include the following information:-
- --- "CAUTION: Area treated with Brave S on (date of
- application). Do not enter for 24 hours. In case of-
- -accidental exposure, wash exposed area withplenty of water and get medical attention. For-
- Jurther Information see 'PRECAUTIONARY
- -STATEMENTS' on the label" --

Note: Slowly invert container several times to assure uniform mixture.

Pour recommended amount in partially filled spray tank. Keep agitator running during filling and spraying operation. DO NOT ALLOW MIXTURE TO STAND. Failure to maintain agitation will cause the sulfur in **Bravo S** to settle and may necessitate manual stirring to redisperse.

Dosage rates on this label indicate pints of Bravo S per acre, unless otherwise stated. Under conditions favoring disease development the high rate specified and shortest application interval should be used except as otherwise provided in this label. Applications should be made in sufficient water to obtain adequate coverage of follage. Gallonage to be used will vary with crop and amount of plant growth. Spray volume will usually range from 20 to 150 gallons (approximately 80 to 600 liters) per acre for dilute sprays and 5 to 10 gallons (approximately 20 to 40 liters) per acre for concentrate ground sprays and aircraft applications. Either ground or aircraft methods of application may be employed unless specific directions are given for a crop. See application and calibration instructions below.

Application and Calibration Techniques for Sprinkler Irrigation

Apply this product only through center pivot, motorized lateral move, traveling gun, solid set and portable (wheel move, side roll, end tow, or hand move) irrigation system(s). On 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 non-uniform distribution of treated water.

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

Do not apply this product through irrigation systems connected to a public water system. '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 per year.

Controls for both Irrigation water and pesticide Injection systems must be functionally Interlocked, so as to automatically terminate pesticide Injection when the irrigation water pump motor stops. A person knowledgeable of the irrigation system and responsible for its operation shall be press t so as to discontinue pesticide injection and nake necessary adjustments, should the need aris.

The Irrigation water pipeline must be fitted with a functional, automatic, quick-closing check valve to prevent the flow of treated irrigation water back toward the water source. The pipeline must also be-fitted with a vacuum relief valve and low pressure drain, located between the irrigation

water pump and the check valve, to prevent backsiphoning of treated irrigation water into the water source

Always inject BRAVO S into irrigation water after it discharges from the irrigation pump and after it passes through the check valve. Never inject pesticides into the intake line on the suction side of the numb.

Pesticide injection equipment must be fitted with a functional, normally closed solenoid-operated valve located on the intake side of the injection pump. Interlock this valve to the power system, so as to prevent fluid from being withdrawn from the chemical supply tank when the irrigation system is either automatically or manually turned off.

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 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.

Spray mixture in the chemical supply tank must be agitated at all times, otherwise settling and uneven application may occur. Do not apply when wind speed favors drift beyond the area intended for treatment.

Bravo 8 may be used through two basic types of sprinkler irrigation systems as outlined in Sections A and B below. Determine which type of system is in place, then refer to the appropriate directions provided for each type.

A. Center Pivot, Motorized La Move and Traveling Gun Irrigation Equipment

For injection of pesticides, these moving systems must use a podisplacement injection pump, of diaphragm or piston type, considerials that are compatible wand capable of being fitted with interlock and capable of injection approximately 2 - 3 times those within the irrigation water line, applicator units cannot be used systems.

Fill chemical supply tank of inje equipment with water. Operate somplete revolution or run acromeasuring time required, amounificated, and acreage covered, mix recommended amount of B acreage to be covered into sam water used during calibration as system continuously for one rerun. Mixture in the chemical sumust be continuously agitated of injection run. Shut off injection after one revolution or run, but operate irrigation system until E been cleared from last sprinkler.



B. Solid Set and Portable (Wheel Move, Side Roll, End Tow, or Hand Move) Irrigation Equipment

With stationary sys ims, an effectively designed in-line venturi applicator unit is preferred which is constructed of materials that are compatible with pesticides, however, a positive-displacement pump can also be used Determine acreage covered by sprinkler Fill tank of injection equipment with water and adjust flow to use contents over a thirty to forty-five minute period. Mix desired amount of Brave \$ for acreage to be covered with water so that the total mixture of Bravo S plus water in the injection tank is equal to the quantity of water used during calibration and operate entire system at normal pressures recommended by the manufacturer of injection equipment used for amount of time established during calibration. Agitation is recommended. Bravo S can be injected at the beginning or end of the irrigation cycle or as a separate application. Stop injection equipment after treatment is completed and continue to operate irrigation system until Bravo S has been cleared from last sprinkler head

RECOMMENDATIONS:

Rates differ from Bravo 500 Agricultural Fungicide

When growing crops for processing, consult the processor before applying Bravo S.

CROP	DISEASES	rate Peragre	APPLICATION DIRECTIONS
Bean (Snap)	Rust Botrytis blight (gray mold) Powdery mildew Red spider miles	4 to 8 pts 8 pts	Use in sufficient water to obtain adequate coverage. Begin applications during early bloom stage or when disease first threatens and repeal at weekly intervals or as necessary to maintain control. De net apply within 7 days of harvest. De net graze treated areas or feed freated plant parts to investock.
Cabbage, Caeilllewer, Breccell, Brussels Sprouts	Alternaria leaf spot flowny mildew	4 1 2 pts	Use in sufficient water to obtain adequate coverage. Begin applications after transplants are set in field, or shortly after emergence of field-seeded crop, or when conditions favor disease development. Repeat at 7 to 10 day intervals or as necessary to maintain control.
	Ring spot (California only)	5 1 2 pls	Use in sufficient water to obtain adequate coverage. For field-seeded brussets spilouts, begin applications at time of party sprout development or when conditions favor disease development. Repeat at 7 to 10 day intervals or as necessary to maintain control.
	Powdery mildew Red spider miles	5 1 2 pls	Use in 8 gallons of water by air. Apply at first sign of infection and repeat at 3 week intervals.
Peanul	Early lealspot (Cercospora) Late lealspot (Cercospondium)	3 to 4-1/4 pts	Use in sufficient water to obtain adequate coverage. Start applications when disease first appears and repeal of 10 to 14 day intervals or as necessary to maintain control. Under severe disease conditions, use the 4-1/4 pints per acre rate at 10 day intervals.
	Rust Web blotch	4-1/4 pts	De not apply within 14 days of harvest. De not allow livestock graze in treated areas. De not feed hay or threshings from trea fields to livestock.
Polato	Early blight, Late blight, Botrytis vine rot (Botrytis app)	3 to 4-1 '4 pls	Use in sufficient water to obtain adequate coverage. Begin applications when plants are 6 to 8 inches high or when disease threatens, and continue at 7 to 10 day intervals or as needed to maintain disease control. Under severe disease conditions, use
	Early blight	2-1 4to 4-1 4pts	4-1 4 pints per acre on a 7 day schedule
	Late blight. (Dryland culture only)		Brove 8 may be applied through sprinkler irrigation equipment (solid set portable wheat move or center pivot systems only). The not exceed a 10 day interval between applications when using this technique. See calibration directions preceding this section.
	Powdery mildew	4-1 4 pts	Apply in 8 gallons of water by air. Apply at first sign of infection and repeat at 3 week intervals.

CROP	DISEASES	RATE PER ACRE	APPLICATION DIRECTIONS
Somete	Early blight, Late blight, Gray leaf spot, Gray leaf mold, Septoria leaf spot	4-1/2 to 5-1 2 pts	Use in sufficient water to obtain adequate coverage. Begin applications when disease threatens and repeal at 7 to 10 day intervals. Under moderate to severe disease conditions, use the highest rate specified and shorten spray interval.
	Anthracnose	\$ 1/2 to 8-1/2 pts	
	Rinzocionia fruit rol Bolryks gray mold, Tomato russett mila	8-1-2 pts	

Tree and Orchard Crops

Apply Bravo S in sufficient water with spray equipment properly calibrated to obtain uniform coverage of tree canopy. Application through ground equipment is recommended. When concentrate sprays are used or when treating non-bearing or immature trees, the lower rate of Srave S may be used. The following spray volumes are recommended as gallons of spray per acre:

	SPRAY YOLUME (Gallons per Acre)		
CROP	Dilute	Concentrate	
Peach, Nectarine, Yart Cherry, Plum, Prune	300	50 to 150	
Sweet Cherry	400	65 to 200	

BRAVOS RATE PER CROP DISEASES ACRE 100 GALT Peach. Leai curl. 910 310 Meclarine. Caryneum blight 12 pts 4 pts Cherry. (shothole) on Peach Plum, Nectarine Prune

	Small Trees	
Brown rol	910	310
blossom blight	12 pts	4 pts
Powdery mildew on	-	-
peaches neclarines	Large Trees	
Scab on	12 to	4 to
peaches neclarines	16 pts	6 pts
Cherry leaf spot	9 to	3 to
Peach Nectarine	12 pts	4 pr
Scab		

*Volumetric rates to be used only with full dilute spray volume specified on this label for tree and orchard crops

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal. Open dumping is prohibited

Storage: Store in a cool place. Protect from excessive heat. If frozen may generally be restored by thorough mixing after thawing. Repeated freezing-thawing cycles may impair utility.

Pesticide Disposal: Pesticide wastes are toxic improper disposal of excess pesticide, pesticide spray or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use

APPLICATION DIRECTIONS

For best control of both diseases apply at leaf fall in late autoinn using sufficient water and proper sprayer calibration to obtain uniform coverage. When conditions lavor high disease levels use the high rate of application and apply once or twice more in mid to late winter before budswe'l. If the leaf fall application is not practical application of Brave S for control of leaf curl may be made at any time prior to budswell the following spring. Where Coryneum blight (shothole) occurs, also apply at budbreak to protect newly emerging leaves and at shuck-split to prevent fruil infections.

Use 12 to 16 pints per acre on trees taller than 20 ft, and 9 to 12 pints per acre on smaller trees. Make one application at popcorn (pink red or early white bud) and a secund application at full bloom. It weather conditions favor disease development, make an additional application at petal fall.

In addition to the bloom applications listed above make one application at shuck-split Disnet apply Braws 8 after shuck-split and before harvest. If additional disease control of cherry leaf spot after harvest, use another registered fungicide. For control of cherry leaf spot after harvest, make one application to lokage within 7 days after fruit is removed. In orchards with a history of high leaf spot incidence, make a second application 10.14 days later.

according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Do not reuse empty container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration,

dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

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EPA Est. I

Warranty and Limitation of Damages

Seller warrants that this material conforms to its chemical description and is reasonably fit for the purposes stated on the label when used in accordance with directions under normal conditions of use and Buyer assumes the risk of any use contrary to such directions. Seller makes no other express or implied warranty, including any other express or implied warranty of Fitness or of Merchantability, and no agent of Seller is authorized to do so except in writing with a specific reference to this warranty. In no event shall Seller's Hability for any breach of warranty exceed the purchase price of the material as to which a claim is made.

ISK Blotech Corporation 5966 Heisley Road, P.O. box 8000 Mentor, Ohio 44061-8000

EPA Reg No 50534-159 EPA Est No 37429-GA-1