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

OFFICE OF PESTICIDES AND TOXIC SUBSTANCES

JUL 30 1981

MEMORANDUM

SUBJECT: CGA-64250 Technical and Tilt 3.6E for use on Grasses Grown for Seed

TO: Douglas D. Campt
Director
Registration Division (TS-767C)

Attached is a list of the data submitted by CIBA-GEIGY Corporation in support of the registration of the subject products. The active ingredient in these formulations, CGA-64250, is a new chemical, never before registered for pesticidal use in the U.S. CGA-64250 Technical is to be registered for general use in formulation of fungicides. Tilt 3.6E is to be registered for general use for control of rusts (Puccinia spp.) and powdery mildew in grasses grown for seed including perennial rye grass, red fescue and chewing fescue.

The applications were initially submitted January 28, 1981. The reviews have been received and a summary of the data by various branches is as follows:

Environmental Fate Branch: The data submitted are adequate to support the registration of CGA-64250 Technical, and the proposed turf use of Tilt 3.6E.

CGA-64250 is stable towards hydrolysis at pH 1-13. The chemical degraded slowly in aerobic soil (half-life of 10 weeks) but not in anaerobic soil. On the soil surface CGA-64250 did not photodegrade over 24 hours. During the aqueous photolysis study, CGA-64250 photodegraded rapidly in natural or simulated sunlight in the presence of photosensitizers (half-life 2.5-24 hours), but less rapidly without sensitizers.

CGA-64250 did not significantly affect soil respiration and nitrification. CGA-64250 is a strong growth retardant and inhibits acetylene reduction. The latter effect is attributed to phytotoxic action rather than nitrogenase inhibition. Degradation of cellulose, starch and protein were not affected. The activated sludge metabolism study shows that CGA-64250 has little measurable effect on the function of the activated sludge process, nor is the sludge process effective in destroying CGA-64250.

The chemical leached moderately through sandy soil with low organic matter, as did aged residues.

Ecological Effects Branch: The studies submitted are sufficient to support the formulating use of CGA-64250 and the use of Tilt 3.6E for use on grasses grown for seed. The company is being advised that if registrations for multiple applications on crops are sought in the future, an avian reproduction study will be required. Any additional uses involving substantial run-off or drift or a combination of the two, may necessitate a fish embryo-larvae study.

The technical bulletin provided by the registrant states that no significant hydrolysis of the technical material occurred in 28 days. The vapor pressure of the material indicates that it is not very volatile.

The bluegill flow through fish accumulation study resulted in a concentration factor of 125 for whole body residue. It appears that the material would not leach very much, and there would be little transport to water. It also appears that the material that does get in water would probably bind to sediment, and not be available for photolysis.

The formulating use of CGA-64250 is not likely to result in any exposure to fish, wildlife or other non-target organisms except through accidents or effluent discharge. The maximum total acreage for potential use of the end-use product is 800,000 acres. Of that, the nationwide maximum occurs in Oregon (about 260,000 acres). Due to the small potential acreage and the low use rate, little hazard is expected from the use of this product. Direct application to water would result in 162 ppb, about 1/5 of the fish acute LC_{50}.

Toxicology Branch: The data submitted meet the requirements of FIFRA for a 3(c)(5) registration. The registration of TILT™ 3.6E can be toxicologically supported. The label signal word and precautionary labeling are acceptable. The registration of Technical CGA-64250 can be toxicologically supported.

Recommendations: Based on the data submitted (see attachment), we are proposing to register these products; the technical for formulating use and the formulated product on grasses grown for seed.

CONCUR _____

NON CONCUR _____

DATE 7/31/81

Douglas D. Campt
Director
Registration Division (TS-767C)

James W. Akerman
Chief
Fungicide-Herbicide Branch
Registration Division (TS-767C)

Doug- This is an excellent submission by Ciba-Geigy. This is the first time in, no EUP, and the end result is a recommendation for registration with all data requirements satisfied. This is a first!
Jim Akerman

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Attachment 1

Data Supporting Technical

ENVIRONMENATL CHEMISTRY

Study Title	Accession Number
Rate of Hydrolysis of CGA-64250 Under Laboratory Conditions	244269
Photoalysis of CGA-64250 on Soil Surface Under Artificial Sunlight Conditons	244269
Adsorption and Desorption of CGA-64250 in Various Soil Types	244269
Effects of Soil Application of CGA-64250 on Nutrification, Soil Respiration and Nitrogen Fixation	244269
Leaching Model Study with the Fungicide CGA-64250 in Farm Standard Soils	244269
Leaching Characteristics of Aged ^{14}C-CGA-64250 Residues in Two Standard Soils	244269
Degradation of CGA-64250 (TILT) in Soil Under Aerobic, Aerobic/Anaerobic and Sterile/Aerolic Conditions	244269
Effects of CGA-64250 on the Degradation of ^{14}C-Cellulose, ^{14}C-Protein and ^{14}C-Starch in Soil	244269
CGA-64250 Activated Sludge Metabolism	244269
Photochemistry of CGA-64250	244269
Bioconcentration of CGA-64250	244269

CHEMISTRY

Basic Chemistry (Manufacturing Process, Analytical Method, Physical Properties, etc.	244267 & 244268

Attachment 2

ECOLOGICAL EFFECTS

Study Title	Accession Number
Avian Acute Oral LD_{50} - Bobwhite Quail and Mallard Duck	244273
Avian Dietary LC_{50} - Bobwhite Quail and Mallard Duck	244273
Fish Acute LC_{50} - Bluegill Sunfish, Rainbow Trout and Channel Catfish	244273
Aquatic Invertebrate LC_{50} - Daphnia magna	244273

TOXICITY

Acute Oral LD_{50} in the Rat of Technical CGA-64250	244271-2
Acute Oral LD_{50} in Mouse of Technical CGA-64250	244271-2
Acute Oral LD_{50} in the Chinese Hamster of Technical CGA-64250	244271-2
Acute Oral LD_{50} in the Rabbit of CGA-64250	244271-2
Acute Intraperitoneal LD_{50} in Rat of Technical CGA-64250	244271-2
Acute Dermal LD_{50} in the Rat of Technical CGA-64250	244271-2
Eye Irritation in the Rabbit after Single Application of Technical CGA-64250	244271-2
Skin Irritation in the Rabbit after Single Application of Technical CGA-64250	244271-2
Acute Aerosal Inhalation Toxicity in the Rat of CGA-64250 EC 250	244271-2
Skin Sensitizing (contact allergenic) Effect in Guinea Pigs of Technical CGA-64250	244271-2
Salmonella/Mammalian Microsome Mutaginicity Test with CGA-64250	244271-2

Study Title	Accession Number
Dominant Lethal Study with CGA-64250 in the Mouse	244271-2
Nucleus Anomaly Test in Somatic Interphase Nuclei with CGA-64250 in the Chinese Hamsters	244271-2
Report on CGA-64250, Teratology Study in Rats	244271-2
Report on CGA-64250 Technical, Teratology Study in Rabbits	244271-2
CGA-64250 Technical, Three Months Toxicity Study on Rats	244271-2
CGA-64250; 3-Month Toxicity Study on Dogs	244271-2

Attachment 3

Data Supporting Formulation

CHEMISTRY

Study Title	Accession Number
Basic Chemistry (Manufacturing Process, Analytical Method, Physical Properties, etc.)	244267-8

TOXICITY

Rat Acute Oral Toxicity	244271-2
Rabbit Acute Dermal Toxicity with CGA-64250 3.6 E FL800410	244271-2
Rabbit Eye Irritation with CGA-64250 3.6 E FL 800410	244271-2
Rabbit Primary Skin Irritation Test with CGA-64250 3.6 E FL 800410	244271-2
4-Hour Acute Aerosol Inhalation Toxicity Study in Rats of CGA-64250 3.6E	244271-2
Guinea Pig Sensitization with CGA-64250 3.6E FL 800410	244271-2