12-29-78

DATE:

To: Product Manager Wilson (21)
TS-767

Through: Dr. Gunter Zweig, Chief
Environmental Fate Branch

Through:

From: Review Section No. 2
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 239-1246

Chemical: Captan

Type Product: Fungicide

Product Name: None

Company Name: Chevron Chemical Company

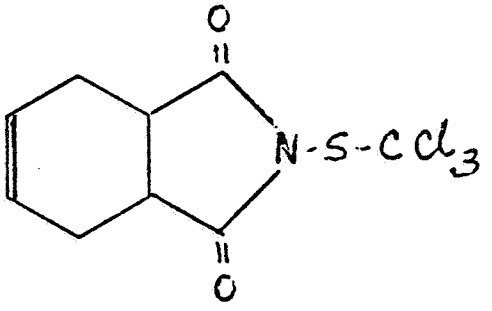
Submission Purpose: Review for 6a2 data only

Date In: 10/24/78

Date Out:

Accession Numbers: 232569, 232570

Structure:



INTRODUCTION

This submission consisted of eight proprietary articles and 39 general literature citations, which contain data to update the Captan file. All submitted data are listed in the bibliography attached to this review. All studies which had been previously reviewed are indicated by (*). The remaining studies were evaluated for 6a2 data only.

CONCLUSIONS

None of the articles reviewed contained 6a2 data.

Emil Regelman 12/29/78
Environmental Fate Branch
Hazard Evaluation Division

Abell, J., "The Water Solubility of DIFOLATAN, Captan and PHALTAN", Chevron Chemical Co. Report, File No. 721.2, January 5, 1968. 6.1

Agnihotri, V.P., "Persistence of Captan and Its Effects on Microflora, Respiration, and Nitrification of a Forest Nursery Soil", Can. J. Microbiol., 17, 377 (1971). 3.10

Atlas, R.M., "Effects of the Fungicide Folpet on Soil Microorganisms", Department of Biology, University of Louisville, Louisville, Kentucky. 10.13

Atlas, R.M., "Effects of the Fungicide Captafol on Soil Microorganisms", Department of Biology, University of Louisville, Louisville, Kentucky. 10.14

Bollag, J., and Henninger, N.M., "Influence of Pesticides on Denitrification in Soil and with an Isolated Bacterium", J. Environ. Qual., 5, 15 (1976). 10.7

Brisou, J., "Contamination of Marine Litoral and Sea Foods by Pesticides", Mededelingen Faculteit, Wetenschappen, Gent., 35, 739 (1970) (English Translation). 8.2

Burchfield, H.P., "Comparative Stabilities of Dyrene, 1-Fluoro-2,4-dinitrobenzene, Dichlone and Captan in a Silt Loam Soil", Contributions from Boyce Thompson Institute, 20, 205 (1959). 3.4

Carey, A.E., Wiersma, G.B., Tai, H. and Mitchell, W.G., "Pesticides in Soil - Organochlorine Pesticide Residues in Soils and Crops of the Corn Belt Region, United States - 1970", Pesticides Monitoring Journal, Vol. 6, No. 4, 369 (1973). 4.4

Chevron Residue Test TE-1086. 3.2

Chevron Residue Test TE-1087. 3.3

Domsch, K.H., "The Effect of Soil Fungicides III. Quantitative Changes of the Soil Flora", Z. Pflanzenkrankh., 66, 17 (1959) (English Translation). 10.8

Domsch, K.H., "The Effect of Soil Fungicides IV. Changes in the Spectrum of the Soil Fungi." Z. Planzenkrankh., 67, 129 (1960) (English Translation). 10.9

Domsch, K.H., "The Effect of Fungicidal Agents on Soil Respiration". Phytopath. Z., 49, 291 (1964) (English Translation). 10.10

Domsch, K.H., "The Influence of Captan on the Degradation of Glucose, Esculin, Chitin and Tannin in the Soil", Phytopath. Z., 52, 1 (1965), (English Translation). 10.11

Domsch, K.H., "Interactions of Soil Microbes and Pesticides", Symp. Biol. Hung. 11, 337 (1972). 10.12

Edwards, C.A., "Effects of Pesticide Residues on Soil Invertebrates and Plants", 5th Symp. Brit. Ecol. Soc., 239 (1965). 4.1

Foschi, S., Cesari, A., Ponti, I., Bentivogli, P.G., and Bencivelli, A., "Study of the Degradation and Vertical Movement of Pesticides in Soil", Notiz. Mal. Piante No. 82-3, 37 (1970) (English Translation). 3.6

Griffith, R.L. and Matthews, S., "The Persistence in Soil of the Fungicidal Seed Dressings Captan and Thiram", Ann. Appl. Biol., 64, 113 (1969). 3.5

Haque, R. and Freed, V.H., "Behavior of Pesticides in the Environment: Environmental Chemodynamics", Residue Reviews, F.A. Gunther, Editor, Vol. 52, pages 89 and 95, Springer-Verlag (1974). 5.1

Helling, C.S. and Turner, B.C., "Pesticide Mobility: Determination by Soil Thin-Layer Chromatography", Science, 162, 562 (1968). 5.2

Housworth, L.D. and Tweedy, B.G., "Effect of Atrazine in Combination with Captan or Thiram Upon Fungal and Bacterial Populations in the Soil", Plant and Soil, 38, 493 (1973). 10.6

Illinois Natural History Survey, "The Fate of Select Pesticides in the Aquatic Environment". Prepared for the Water Quality Office, Environmental Protection Agency, 1973. 8.1

Kluge, E., "On the Duration of the Effect of Thiuram, Ferbam and Captan in Forest Soils", Arch. Pflanzenschutz, 5, 39 (1969) (English Translation). 3.8

Kluge, E., "The Effect of the Soil Reaction on the Degradation and Persistence of Thiuram, Ferbam and Captan in the Soil", Arch. Pflanzenschutz, 5, 263 (1969) (English Translation). 3.9

Lai, J., "Captan - Distribution Between Octanol and Water", Chevron Chemical Co. Report, July 20, 1977. 8.4

Lai, J., "Captafol - Distribution Between Octanol and Water", Chevron Chemical Co. Report, July 29, 1977. 8.5

Latham, A.J. and Linn, M.B., "An Evaluation of Certain Fungicides for Volatility, Toxicity and Specificity Using a Double Petri Dish Diffusion Chamber", Plant Disease Reporter, 49, 398 (1965). 7.2

Mitchell, L.C., "The Effect of Ultraviolet Light (2537 Å) on 141 Pesticide Chemicals by Paper Chromatography", J. of AOAC, 44, 643 (1961). 9.1

Munnecke, D.E., "Movement of Nonvolatile, Diffusible Fungicides Through Columns of Soil", Phytopathology, 51, 593 (1961). 5.4

Munnecke, D.E., Domsch, K.H. and Eckert, J.W., "Fungicidal Activity of Air Passed Through Columns of Soil Treated with Fungicides", Phytopathology, 52, 1298 (1962). 7.3

Naumann, K., "On the Dynamics of the Soil Micro-flora After Application of the Fungicides Olpisan (trichlorodinitrobenzene), Captan and Thiuram", Arch. Pflanzenschutz, 6, 383 (1970) (English Translation). 10.5

Pack, D.E., "The Soil Metabolism of Carbonyl-^{14}C-Captan", Chevron Chemical Co. Report, File No. 773.21, October 23, 1974. 2.1

Pack, D.E., "Soil Mobility of Captan, Folpet and Captafol as Determined by Soil Thin-Layer Chromatography", Chevron Chemical Co. Report, September 2, 1977. 5.3

Polizu, A. and Greger, H., "Studies on the Breakdown of Captan and PHALTAN", An. Inst. Cercet. Prot. Plant Acad. Stiinte Agr. Silvice, 6, 495 (1970) (English Translation). 6.2

Potter, J., "Studies on the Degradation of Captan PHALTAN, and DIFOLATAN by Sunlight and Ultra-violet Light", Chevron Chemical Co. Report, File No. 740.10, July 10, 1964. 9.3

Rümker, V.R. and Horay, F., "Pesticide Manual", R&R Consultants, Shawnee Mission, Kansas, August 1972, pages 316-320. 7.1

Serra, G., "Study of the Degradation of Captan, Phaltan and DIFOLATAN under the Influence of Light", Phytiatrie-Phytopharmacie, 13, 107 (1964). (English Translation). 9.2

Sleight, B.H., III, and Macek, K.J., "Kinetics of ^{14}C-DIFOLATAN in a Model Aquatic Ecosystem", Bionomics, Inc., Wareham, Massachusetts (1973). 8.3

"Stability of Captan in Microaerophillic Taro Soil", University of Hawaii, October 1974. 3.1

Stevens, L.J., Collier, C.W., and Woodham, D.W., "Pesticides in Soil - Monitoring Pesticides in Soils from Areas of Regular, Limited, and No Pesticide Use", Pesticides Monitoring Journal, Vol. 4, No. 3, 145 (1970). 4.2

6

Tagawa, H., and Yamaguchi, Y., "Persistence of Captan and DIFOLATAN in Soil and Their Absorption by Tobacco Plant from Soil", Bulletin of the Hatano Tobacco Experiment Station No. 73, 353 (March 1973) (English Translation). 3.7

Tews, L. L., "The Effects of Selected Fungicides and Soil Fumigants Upon the Microfungi of a Cattail Marsh", Proc. 14th Conf. Great Lakes Research, page 128 (1971). 10.4

Wainwright, M. and Pugh, G.J.F., "The Effect of Three Fungicides on Nitrification and Ammonification in Soil", Soil Biol. Biochem. 5, 577 (1973). 10.1

Wainwright, M. and Pugh, G.J.F., "The Effects of Fungicides on Certain Chemical and Microbial Properties of Soils", Soil Biol. Biochem., 6, 263 (1974). 10.2

Wainwright, M. and Pugh, G.J.F., "Effect of Fungicides on the Numbers of Microorganisms and Frequency of Cellulolytic Fungi in Soils", Plant Soil, 43, 561 (1975). 10.3

Wiersma, G.B., Tai, H., and Sand, P.F., Pesticides in Soil - Pesticide Residue Levels in Soils, FY 1969 - National Soils Monitoring Program", Pesticides Monitoring Journal, Vol. 6, No. 3, 194 (1972). 4.3

Wolfe, N.L., Zepp, R.G., Doster, J.C. and Hollis, R.C., "Captan Hydrolysis", J. Agric. Food Chem., 24, 1041 (1976). 6.3