

VIVEKANANDA COLLEGE
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NAAC ACCREDITED 'A' GRADE

Topic: Synthesis, Technical Manufacture, Uses of Representative Of Pesticides

Course Title: Skill Enhancement Course

Paper: SEC-B4

Unit: NA

Semester: 4

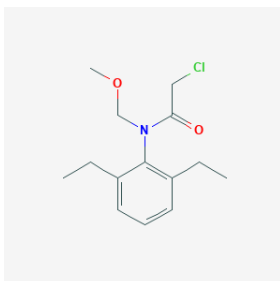
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Name of the Department: Chemistry

Synthesis, Technical Manufacture, Uses Of Representative Of Pesticides

1. Alachlor: Alachlor is a Colorless to white crystalline solid. Melting point 104-106°F (40-41°C).

Class: Chloroanilides



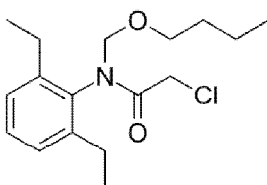
Synthesis: 2,6-diethylaniline is reacted with formaldehyde. Then the compound obtained is treated with chloroacetyl chloride with successive treatment of methanolic ammonia.

Uses: It is most commonly available as microgranules containing 15% active ingredients (AI), or emulsifiable concentrate containing 480 g/ litre of AI. The largest use of alachlor is as a herbicide for control of annual grasses and broadleaf weeds in crops, primarily on corn, sorghum, and soybeans.

Its mode of action is elongase inhibition, and inhibition of geranylgeranyl pyrophosphate (GGPP) cyclisation enzymes, part of the gibberellin pathway. It is marketed under the trade names Alanex, Bronco, Cannon, Crop Star, Intrro, Lariat, Lasso, Micro-Tech and Partner.

2. Butachlor: Butachlor is a light yellow colored oily liquid. It melts at -2. 8°C.

Class: the chloroacetamide class of herbicides



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Synthesis: It can be synthesized using same path as in the case of Alachlor. Only methanol is replaced by n-butanol. 2,6-diethylaniline is reacted with formaldehyde. Then the compound obtained is treated with chloroacetyl chloride with successive treatment of n-butanol.

Uses: Butachlor is a herbicide of the acetanilide class. It is used as a selective pre-emergent herbicide. It is extensively used in India in the form of granules in rice as post emergence herbicide. Used for Pre-emergence control of most annual grasses, certain broadleaf weeds in seeded and transplanted rice grown in certain Asian, South American, European and African countries.

References:

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2. "Poisons Standard 2013". *comlaw.gov.au*. Retrieved 17 May 2015
3. Butachlor at Sigma-Aldrich
4. *Merck Index*, 11th Edition, 1498