5-22-96

DATA EVALUATION RECORD 1

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CHEM 108401 Thiobencarb §161-1

FORMULATION--00--ACTIVE INGREDIENT

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STUDY ID 41609012
Chen, Y.S. 1990. Hydrolysis of [phenyl-U-$^{14}$C]-thiobencarb in water. Laboratory Project ID: MEF-0149/9007557. Unpublished study performed and submitted by Chevron Chemical Company, Richmond, CA. (41609012)

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CONCLUSIONS:

Degradation - Hydrolysis

1. The hydrolysis study is acceptable and satisfies the 161-1 data requirement.

2. $^{14}$C-Thiobencarb [S-[(4-chlorophenyl)methyl]diethyl carbamothioate] at 4.3 ppm did not degrade in sterile, aqueous buffer solutions incubated at 25 °C in darkness at pH values of 5, 7, and 9. Therefore, no degradation products were detected. Material balances were acceptable for each pH value and ranged from 89.3-105.6 for the entire study.

METHODOLOGY:

Phenyl-labeled $^{14}$C-thiobencarb[S-[(4-chlorophenyl)methyl]diethyl. carbamothioate; radiochemical purity 99.8%, specific activity 359,092 MBQ/mmol (41.7 mCi/mMol, Wizard Laboratories)], was made into an acetonitrile solution containing 6142 mg/ml. The buffer solutions (200 ml of pH 5, 7, and 9) were prepared by adding one pHydrion™ buffer capsule to 200 ml of HPLC grade water for each pH, leading to buffer concentrations of 50 mM for all solutions. These buffer solutions were then filter sterilized using a Nalgene™ sterilization unit. An aliquot (140 ul) of the stock (acetonitrile) solution was

added to each buffer solution to obtain an nominal thiobencarb concentration of 4.3 ppm. After solution preparation, 17 10-ml vials were filled with each solution for sampling at 0, 1, 3, 7, 14, 21, and 30 days.

Duplicate samples were analyzed using HPLC with radioactivity detection and TLC/Autoradiography. Identification of radioactivity was confirmed by LC/MS and by HPLC co-chromatography with authentic standards. More details about the analytical procedure may be seen in the Materials and Methods attachments.

DATA SUMMARY:

$^{14}$C-Thiobencarb [S-[(4-chlorophenyl)methyl]diethyl carbamothioate] at 4.3 ppm did not degrade in sterile, aqueous buffer solutions incubated at 25 °C in darkness at pH values of 5, 7, and 9. Therefore, no degradation products were detected. Material balances were acceptable for each pH value and ranged from 89.3-105.6 for the entire study.

COMMENTS:

None.



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Thiobencarb

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