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

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OFFICE OF
PESTICIDES AND TOXIC
SUBSTANCES

MEMORANDUM

SUBJECT: Review of New Chemical Screen for XRD-498 and XRM-5019
CAS Reg. No.: 98967-40-9/1582-09-8
Chemical code: 129016

TO: J. Miller/S. Robbins
Product Manager #23
Registration Division (H7505C)

THRU: Paul Mastradone, Chief
Chemistry Review Section #1
Environmental Fate and Ground Water Branch (H7507C)

THRU: Hank Jacoby, Chief
Environmental Fate and Ground Water Branch
Environmental Fate and Effects Division (H7507C)

FROM: Gail Maske, Chemist
Chemical Review Section #1
Environmental Fate and Ground Water Branch (H7507C)

EFGWB has been requested to reevaluate the new chemical screen for XRD-498 (WGM; March 1992) for use of XRM-5019 on corn and soybeans to control broadleaf weeds and annual grasses. Based on concerns addressed with the aerobic soil metabolism, anaerobic aquatic metabolism, leaching, adsorption/desorption, terrestrial field dissipation, and the confined rotatioal crops studies, XRD-498 and XRM-5019 failed the original new chemical screen (WGM;March 1992). DowElanco submitted data in response to these concerns which were reviewed by EFGWB (WGM; 07/ /92) in July 1992. Therefore, upon reevaluating the data base for the terrestrial food and feed use pattern, there is sufficient data for XRD-498 and XRM-5019 to marginally pass the new chemical screen.

Unlike most new chemical screens, many of the data requirements for XRD-498 has been reviewed in detail. Only one of the data requirements for Section 3 registration of XRD-498 (the confined rotation crops (165-1) data requirement) is

considered supplemental. Therefore, XRD-498 and XRM-5019 are being reviewed for use on target crops only with no rotation of crops at this time. A brief summary of additional data in support of the confined rotational crop was submitted in the response to the new chemical screen review (WGM;March 1992). However, the confined rotational crops data requirement can not be reevaluated until this additional data is submitted for review.

ENVIRONMENTAL FATE ASSESSMENT XRD-498

Based upon a review of the submitted studies for both the [^{14}C-aniline]XRD and the [^{14}C-pyrimidine]XRD ring, XRD-498 appears to be persistent (hydrolysis-t½=>>60 days, photodegradation-t½=84-90 days, aerobic soil metabolism-2 to 3 months, anaerobic aquatic metabolism-183 days, field dissipation-t½=1.5 to 3 months) and very mobile (in twenty-three soils-ranging in texture from sandy loam to clay-the adsorption coefficients (K_d) ranged from 0.05 to 2.42, and K_{oc} values ranged from 5 to 182). There were numberous minor degradates which were reported at concentrations of <0.01 ppm.

In summary, XRD-498 may exhibit some leaching in the environment. Therefore, it has the possibility of reaching ground-water. Also its persistence makes it a possible surface water contaminate. However, XRD-498 does appear to degrade faster in soils with higher pH and lower organic carbon content.

Based on an octanol/water coefficient of 1.62, XRD-498 is not expected to accumulate in fish. However, the confined rotational crops data indicates that XRD-498 residues may accumulate at concentrations of ≈≤10 ppb in rotational crops planted at 365 day posttreat-ment and ≈≤100 ppb in rotational crops planted at 30- and 120-days posttreatment) in rotational crops.

The status of the Environmental Fate Data Requirements for XRD-498 for terrestrial food and feed crops use pattern is as follows:

Environmental Fate Data Requirement		Status of Data Requirement	MRID No.
Degradation Studies-Lab			
161-1	Hydrolysis	Fulfilled (WGM;02/02/90)	41263229
161-2	Photodegradation in water	Fulfilled (GJT;03/24/92)	41931726 41931727
161-3	Photodegradation on soil	Fulfilled (WGM;03/24/92)	41931728 41931729 41931730
161-4	Photodegradation in air	Not Submitted[1]	
Metabolism Studies-Lab			
162-1	Aerobic soil	Fulfilled (WGM;06/22/90) (WGM;03/24/92) (WGM; /92)	41263230 41931731 41931732
162-3	Anaerobic aquatic	Fulfilled (WGM;03/24/92) (WGM; /92)	41931733
Mobility Studies			
163-1	Leaching, Adsorption/ Desorption	Fulfilled[2] (WGM;06/22/90)	41263231 41290403
163-2	Volatility-lab	Not Submitted[1]	
163-3	Volatility-field	Not Submitted[1]	
Dissipation Studies-field			
164-1	Soil	Fulfilled (WGM;03/24/92) (WGM; /92)	41931735

Accumulation Studies

165-1	Rotational crops-confined	Not Fulfilled[2&3] (WGM;02/02/90) (WGM;03/24/92) (WGM; /92)	41263232 41931739
165-4	in Fish	Waived (WGM;06/22/90)	

[1] Based on the low vapor pressure (0.8×10^{-15} mm Hg) and toxicological classification of ≥3, there would be sufficient data to support a waiver request for these studies.

[2] Based on insufficient data to support the rotational crop data requirement, there should be no rotation of crops.

[3] New chemical screens should include a complete data package. This data package is reviewed as acceptable data for the respective data requirements.