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OFFICE OF
PREVENTION, PESTICIDES AND
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MEMORANDUM

SUBJECT: Environmental Fate and Effects Division Review of the Environmental Fate and Ecotoxicity Data for Pyrasulfotole (Bayer 309).

TO: Tracy White, Chemical Review Manager
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Registration Division (7505P)

FROM: Melissa A. Panger, Ph.D., Biologist
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APPROVED

BY: Elizabeth Behl, Branch Chief
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Marietta Echeverria (for E. Behl)
7/12/07

Please find attached the data evaluation records (DER) for the following studies evaluating the ecological fate (**Table 1**) and effects (**Table 2**) of pyrasulfotole:

Table 1. Ecological Fate Studies for Pyrasulfotole.

GUIDE-LINE	MRID	STUDY TITLE	EPA CLASSIFICATION	COMMENTS
161-1	46801705	[Pyrazole-3-14C] AE0317309: hydrolytic degradation	Acceptable	None
161-2	46801706	[¹⁴ C-UL-Phenyl] and [¹⁴ C-3-pyrazole] AE0317309: phototransformation in water	Acceptable	None



GUIDE-LINE	MRID	STUDY TITLE	EPA CLASSIFICATION	COMMENTS
161-3	46801707	[Pyrazole-3- ¹⁴ C] AE0317309: phototransformation on soil		
162-1	46801709	[Phenyl-U- ¹⁴ C]- and [pyrazole-3- ¹⁴ C]-AE 0317309: aerobic soil metabolism in a loamy sand soil of US origin under laboratory conditions at 25°C	Acceptable	None
162-1	46801710	[Phenyl-U- ¹⁴ C]- and [pyrazole-3- ¹⁴ C]-AE 0317309: aerobic soil metabolism in a silt loam soil of US origin under laboratory conditions at 25°C	Acceptable	None
162-1	46801711	[Phenyl-UL- ¹⁴ C] and [pyrazole-3- ¹⁴ C]AE 0317309: aerobic soil metabolism in a European soil	Supplemental	Foreign soil was used and it was not established that the soil is comparable to soils that would be found in typical use areas for pyrasulfotole in the United States; the study is upgradeable
162-2	46801712	[Phenyl-UL- ¹⁴ C] and [pyrazole-3- ¹⁴ C]AE 0317309: anaerobic soil metabolism	Acceptable	None
162-3	46801714	[Phenyl-UL- ¹⁴ C]AE 0317309: anaerobic aquatic metabolism	Acceptable	None
162-3	46801715	[Pyrazole-3- ¹⁴ C]AE 0317309: anaerobic aquatic metabolism	Acceptable	None
162-4	46801713	[Pyrazol-3- ¹⁴ C]AE 0317309 and [phenyl-UL- ¹⁴ C]AE 0317309: aerobic aquatic metabolism	Acceptable	None
163-1	46801703	Adsorption/desorption of AE 0317309 on five soils and one sediment	Acceptable	None
163-1	46801704	[¹⁴ C]-RPA 203328: Adsorption/desorption in five soils	Acceptable	None
164-1	46801716	Terrestrial field dissipation of AE 0317309 in Kansas soil, 2004	Acceptable	None
164-1	46801717	Terrestrial field dissipation of AE 0317309 in North Dakota	Acceptable	None

GUIDE-LINE	MRID	STUDY TITLE	EPA CLASSIFICATION	COMMENTS
		soil, 2004		
164-1	46801718	Terrestrial field dissipation of AE 0317309 in Washington soil, 2004	Acceptable	None

Table 2. Ecological Effects Studies for Pyrasulfotole.

GUIDE-LINE	MRID	STUDY TITLE	EPA CLASSIFICATION	COMMENTS
71-1	468017-29	Technical AE0317309: An Acute Oral LD ₅₀ with Northern Bobwhite.	Acceptable	None
71-2	468017-30	Technical AE0317309: A Subacute Dietary LC ₅₀ with Northern Bobwhite	Acceptable	None
71-2	468017-31	Technical AE0317309: A Subacute Dietary LC ₅₀ with Mallards	Acceptable	None
71-4	468017-32	Effect of Technical AE 0317309 on Northern Bobwhite Reproduction	Acceptable	None
71-4	468017-33	Effect of Technical AE 0317309 on Mallard Reproduction.	Acceptable	None
72-1	468017-24	The 96 Hour Acute Toxicity to the Rainbow Trout, <i>Oncorhynchus mykiss</i> , in a Static System; AE 0317309 Technical 97.4% w/w (Amended Report).	Acceptable	None
72-1	468017-25	The 96 Hour Acute Toxicity to the Bluegill Sunfish, <i>Lepomis macrochirus</i> , in a Static System, AE 0317309 Technical, 98.2% w/w (Amended Report)	Acceptable	None
72-2	468017-21	The 48-Hour Acute Toxicity to the Water Flea, <i>Daphnia magna</i> , in a Static System AE 0317309 Technical 97.4% w/w	Acceptable	None
72-3	468017-22	AE 0317309-Acute Toxicity to Eastern Oysters (<i>Crassostrea virginica</i>) Under Flow-Through Conditions	Acceptable	None
72-3	468017-23	AE 0317309- Acute Toxicity to Mysids (<i>Americamysis bahia</i>) Under Static Conditions	Acceptable	None

GUIDE-LINE	MRID	STUDY TITLE	EPA CLASSIFICATION	COMMENTS
72-3	468017-26	Acute Toxicity of AE 0317309 Technical to the Sheepshead Minnow (<i>Cyprinodon variegates</i>) Under Static Conditions.	Acceptable	None
72-4	468017-27	Chronic Toxicity of AE 0317309 Technical to the <i>Daphnia magna</i> Under Static Renewal Conditions.	Acceptable	None
72-4	468017-28	Early Life Stage Toxicity of AE 0317309 Technical to the Fathead Minnow (<i>Primephales promelas</i>) Under Flow-Through Conditions	Acceptable	None
141-1	468017-35	Contact toxicity (LD50) to honey bees (<i>Apis mellifera</i> L.), Substance technical	Supplemental	No negative control was tested
850.4400	468017-36	Toxicity of AE 0317309 Technical to Duckweed (<i>Lemna gibba</i> G3) Under Static Conditions.	Acceptable	None
850.5400	468017-38	Toxicity of AE 0317309 Technical to the Freshwater Diatom <i>Navicula pelliculosa</i>	Acceptable	None
850.5400	468017-37	Toxicity of AE 0317309 Technical to the Green Alga <i>Pseudokirchneriella subcapitata</i> (a.k.a. <i>Selenastrum capricornutum</i>).	Acceptable	None
850.5400	468017-39	Toxicity of AE 0317309 Technical to the Blue-Green Algae <i>Anabaena flos-aquaea</i>	Supplemental	A NOAEC for biomass could not be determined due to significant inhibition at all treatment levels
850.5400	468017-40	Toxicity of AE 0317309 Technical to the Saltwater Diatom <i>Skeletonema costatum</i> .	Acceptable	None
123-1a	468019-26	Non-target terrestrial plants: Seedling emergence and growth test (Tier 2) Suspo-emulsion: 50+12.5 g/L (Code: AE 0317309 02 SE06 A102)	Acceptable	None
123-1a	468019-36	Non-target terrestrial plants: Seedling emergence and seedling growth test (Tier 2); AE	Acceptable	None

GUIDE-LINE	MRID	STUDY TITLE	EPA CLASSIFICATION	COMMENTS
		0.317309+Mefenpyr di-ethyl+Bromoxynil (Code: AE 0317309 03 EC23 A8)		
123-1b	468019-27	Non-target terrestrial plants: Vegetative vigor test (Tier 2) AE 0317309 + Mefenpyr di-ethyl (AE F107892); Suspo-emulsion: 50+12.5 g/L (Code: AE 0317309 02 SE06 A102)	Supplemental	EC ₂₅ values could not be determined for onion and sugar beet survival, and the reviewer was unable to statistically analyze plant height because the study authors only reported the range of values within each replicate and the treatment mean; no replicate mean values were reported.
123-1b	468019-37	Non-target terrestrial plants: Vegetative Vigor test (Tier 2), AE 0317309+Mefenpyr di-ethyl+Bromoxynil (Code: AE 0317309 03 EC23 A8)	Supplemental	A NOAEC could not be determined for the most sensitive endpoint, cucumber dry weight. Inhibition in biomass at the lowest treatment level was 18%.
850.6200	468017-41	AE 0317309, substance, technical (Code: AE 0317309 00 1C96 0001): Acute Toxicity to Earthworms (<i>Eisenia fetida</i>) tested in Artificial Soil	Supplemental	Non-guideline (EPA requires a 28-day test, this is a 14-day test)
850.6200	468017-42	RPA 203328, Acute Toxicity (14-Day) to Earthworms (<i>Eisenia foetida</i>)	Supplemental	Non-guideline (EPA requires a 28-day test, this is a 14-day test)
Non-Guideline	468017-43	Isoxaflutole-RPA 203328 (AE B197555): Reproduction toxicity to the earthworm <i>Eisenia fetida</i> in artificial soil	Supplemental	Non-guideline - This study was based on procedures of the ISO Guideline 11268-2 "Soil quality-Effects of pollutants on earthworms (<i>Eisenia fetida</i>) Part 2: Determination of effects on reproduction" (July 1998).
Non-Guideline	468017-34	Oral toxicity (LD50) to honey bees (<i>Apis mellifera</i> L.), Substance technical	Supplemental	Non-guideline

All of the studies were classified by EPA as acceptable or supplemental. The 'supplemental' studies deviated from guideline requirements for a variety of reasons (see Tables 1 and 2); however, they are considered scientifically valid, and, thus, can be used

for risk assessment purposes. If you have any questions regarding these data evaluation records, please do not hesitate to contact us.