

US EPA ARCHIVE DOCUMENT

Per conversation w/ Jim Goodyear - even though this review is signed by official.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF PESTICIDE PROGRAMS

ENVIRONMENTAL FATE AND EFFECTS DIVISION

And the results are in the need for evaluation of DDT

Carly B... 5/29/78

June 22, 1989

MEMORANDUM

Subject: Upgrading of aquatic toxicity studies on α -Naphthol a degradate of technical Carbaryl (Record No. 238220).

From: James W. Akerman, Chief
Ecological Effects Branch (H7507C)

To: Dennis Edwards, PM#12
Insecticide and Rodenticide Branch
Registration Division

In March of 1988 this branch reviewed a submission (MRID-265665) from Rhône-Poulenc Ag Company of studies done by Springborn Bionomics on α -Naphthol, a degradate of Carbaryl (Shaughnessy No. 056801). EEB ruled that these studies were only "Supplemental" because of questions about the stability of the chemical in water and the methods of calculating the LC₅₀s under conditions of changing chemical concentrations.

Rhône-Poulenc answered these objections in a recent submission (MRID-409552). Generally they stated that the decrease in the concentration of α -Naphthol was due to the metabolism of the fish in the aquaria and that this decrease did not take place in aquaria used to test species that have a smaller mass.

They recalculated the LC₅₀s based on median concentrations between measurements and reported the LC₅₀s and NOELs.

EEB biologist James Goodyear has reviewed the new study reports and has found that they fulfil the guideline requirements. A copy of the report, "Overview: Aquatic Toxicity of 1-Naphthol", by Rhône-Poulenc, has been retained in EEB's files.

409552-02
MRID No.

056801
Shaughnessy No.

DATA EVALUATION RECORD
 α -Naphthol, a Carbaryl Degradate
Acute Toxicity in Aquatic Invertebrates
Mysid Shrimp (*Mysidopsis bahia*)

GUIDELINE NUMBER: 72-3

CITATION:

Surprenant, D. 1986. Acute toxicity of α -naphthol to Mysids (*Mysidopsis bahia*): Report #BW-86-8-2134: Study #565.0386.6122-510. Springborn Bionomics, Inc., 790 Main Street, Wareham, MA 02571. 43 pp. MRID 409552-02. Submitted by Rhone-Poulenc Ag Company, Box 12014, 2 T.W. Alexander Drive, Research Park, North Carolina 27709.

REASON FOR SUBMISSION:

Registrant's response to a previous review of the same study that had been classified as "Supplemental but can be upgraded."

RESULTS- Valid X Invalid _____ Incomplete _____

GUIDELINE- Satisfied X Partially Satisfied _____ Not Satisfied _____

DISCUSSION:

The registrant has satisfactorily explained the questions raised in the previous review and recalculated the LC_{50} to adjust for the change in the concentration of α -naphthol. EEB accepts the study as "Core", with an $LC_{50} = 0.21$ (C.I. 0.19 - 0.25) mg/l (calculated with the moving average method) and a NOEL = 0.06 mg/l. The degradate would be categorized as being "Highly Toxic" to Mysid shrimp.

REVIEWED BY:

James J. Goodyear
Biologist, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

APPROVED BY:

Raymond W. Matheny
Head, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

409552-03
MRID No.

056801
Shaughnessy No.

DATA EVALUATION RECORD
 α -Naphthol, a Carbaryl Degradate
Acute Toxicity in Aquatic Invertebrates
Bluegill sunfish (*Lepomis macrochirus*)

GUIDELINE NUMBER: 72-1

CITATION:

Surprenant, D. 1986. Acute toxicity of α -naphthol to Bluegill sunfish (*Lepomis macrochirus*): Report #BW-86-6-2040: Study #565.0386.6122-100. Springborn Bionomics, Inc., 790 Main Street, Wareham, MA 02571. 43 pp. MRID 409552-03. Submitted by Rh ϕ ne-Poulenc Ag Company, Box 12014, 2 T.W. Alexander Drive, Research Park, North Carolina 27709.

REASON FOR SUBMISSION:

Registrant's response to a previous review of the same study that had been classified as "Supplemental but can be upgraded."

RESULTS- Valid X Invalid _____ Incomplete _____
GUIDELINE- Satisfied X Partially Satisfied _____ Not Satisfied _____

DISCUSSION:

The registrant has satisfactorily explained the questions raised in the previous review and recalculated the LC₅₀ to adjust for the change in the concentration of α -naphthol. EEB accepts the study as "Core", with an LC₅₀ = 0.76 (C.I. 0.51 - 1.0) mg/l (calculated with the probit method) and a NOEL = <0.43 mg/l. The degradate would be categorized as being "Highly Toxic" to Mysid shrimp.

REVIEWED BY:

James J. Goodyear
Biologist, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

APPROVED BY:

Raymond W. Matheny
Head, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

409552-05
MRID No.

056801
Shaughnessy No.

DATA EVALUATION RECORD
 α -Naphthol, a Carbaryl Degradate
Acute Toxicity in Aquatic Invertebrates
Daphnids (*Daphnia magna*)

GUIDELINE NUMBER: 72-2

CITATION:

Surprenant, D. 1986. Acute toxicity of α -naphthol to Daphnids (*Daphnia magna*): Report #BW-86-6-2131: Study #565.0386.6122-110. Springborn Bionomics, Inc., 790 Main Street, Wareham, MA 02571. 36 pp. MRID 409552-04. Submitted by Rhône-Poulenc Ag Company, Box 12014, 2 T.W. Alexander Drive, Research Park, North Carolina 27709.

REASON FOR SUBMISSION:

Registrant's response to a previous review of the same study that had been classified as "Supplemental but can be upgraded."

RESULTS- Valid X Invalid _____ Incomplete _____
GUIDELINE- Satisfied X Partially Satisfied _____ Not Satisfied _____

DISCUSSION:

The registrant has satisfactorily explained the questions raised in the previous review and recalculated the LC₅₀ to adjust for the change in the concentration of α -naphthol. EEB accepts the study as "Core", with an LC₅₀ = 0.73 (C.I. 0.60 - 0.87) mg/l (calculated with the moving average method) and a NOEL of <0.29 mg/l. The degradate would be categorized as being "Highly Toxic" to *Daphnia magna*.

REVIEWED BY:

James J. Goodyear
Biologist, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

APPROVED BY:

Raymond W. Matheny
Head, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

409552-04
MRID No.

056801
Shaughnessy No.

DATA EVALUATION RECORD
 α -Naphthol, a Carbaryl Degradate
Acute Toxicity in Freshwater Fish
Rainbow trout (*Salmo gairdneri*)

GUIDELINE NUMBER: 72-1

CITATION:

Surprenant, D. 1986. Acute toxicity of α -naphthol to Rainbow trout (*Salmo gairdneri*): Report #BW-86-7-2067: Study #565.0386.6122-103. Springborn Bionomics, Inc., 790 Main Street, Wareham, MA 02571. 36 pp. MRID 409552-04. Submitted by Rhône-Poulenc Ag Company, Box 12014, 2 T.W. Alexander Drive, Research Park, North Carolina 27709.

REASON FOR SUBMISSION:

Registrant's response to a previous review of the same study that had been classified as "Supplemental but can be upgraded."

RESULTS- Valid X Invalid _____ Incomplete _____
GUIDELINE- Satisfied X Partially Satisfied _____ Not Satisfied _____

DISCUSSION:

The registrant has satisfactorily explained the questions raised in the previous review and recalculated the LC₅₀ to adjust for the change in the concentration of α -naphthol. EEB accepts the study as "Core", with an LC₅₀ = 1.4 (C.I. = 1.0 - 2.0) mg/l (calculated with the binomial method) and a NOEL of 0.55 mg/l. The degradate would be categorized as being "Moderately Toxic" to Rainbow trout.

REVIEWED BY:

James J. Goodyear
Biologist, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

APPROVED BY:

Raymond W. Matheny
Head, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

409552-01
MRID No.

056801
Shaughnessy No.

DATA EVALUATION RECORD
 α -Naphthol, a Carbaryl Degradate
Acute Toxicity in Freshwater Fish
Sheepshead Minnow (*Cyprinodon variegatus*)

GUIDELINE NUMBER: 72-3

CITATION:

Surprenant, D. 1986. Acute toxicity of α -naphthol to Sheepshead minnows (*Cyprinodon variegatus*): Report #BW-86-6-2089: Study #565.0386.6122-500. Springborn Bionomics, Inc., 790 Main Street, Wareham, MA 02571. 35 pp. MRID 409552-01. Submitted by Rhône-Poulenc Ag Company, Box 12014, 2 T.W. Alexander Drive, Research Park, North Carolina 27709.

REASON FOR SUBMISSION:

Registrant's response to a previous review of the same study that had been classified as "Supplemental but can be upgraded."

RESULTS- Valid X Invalid _____ Incomplete _____
GUIDELINE- Satisfied X Partially Satisfied _____ Not Satisfied _____

DISCUSSION:

The registrant has satisfactorily explained the questions raised in the previous review and recalculated the LC₅₀ to adjust for the change in the concentration of α -naphthol. EEB accepts the study as "Core", with an LC₅₀ = 1.2 (C.I. = 0.81 - 1.7) mg/l (calculated with the binomial method) and a NOEL of 0.46 mg/l. The degradate would be categorized as being "Moderately Toxic" to Sheepshead minnows.

REVIEWED BY:

James J. Goodyear
Biologist, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____

APPROVED BY:

Raymond W. Matheny
Head, Section 1
Ecological Effects Branch
Environmental Fate and Effects Division (H7507C)

Signature: _____

Date: _____