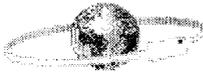


201-14315



Jodi Burgess  
02/27/2003 11:32 AM

To: Jodi Burgess/DC/USEPA/US@EPA  
cc:  
cc:  
Subject: Revised Test Plan and Robust Summaries ( Email 1 of 2)



Christopher Bradlee <bradlec@basf-corp.com> on 02/26/2003 11:22:49 AM

To: Oppt.ncic@epamail.epa.gov  
cc:

Subject: Revised Test Plan and Robust Summaries ( Email 1 of 2)

OPPT,

BASF Corporation is submitting its Revised Test Plan and Robust Summaries for the Dicamba and Acifluorfen Intermediates Category. These revisions address the U.S. EPA's comments posted on the ChemRTK HPV Challenge Program Web site on December 2, 2002.

Cover Letter and Revised Test Plan.

(See attached file: Response\_to\_EPA\_Final.pdf) (See attached file: APN\_Test\_Plan\_Revised\_Final.pdf)

Due to file size, the Revised Robust Summaries are being sent as a second email.

Let me know if you have any questions or comments.

Regards,  
Christopher A. Bradlee  
Toxicologist  
BASF Corporation  
Corporate Ecology & Safety  
1609 Biddle Avenue  
Wyandotte, MI 48192  
bradlec@basf.com  
Tel: 734.324.6867  
Fax: 734.324.5226



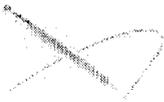
Response\_to\_EPA\_Final.pdf



APN\_Test\_Plan\_Revised\_Final.pdf

RECEIVED  
OPPT NCIC  
2003 FEB 27 AM 11:39

201-14315



Jodi Burgess

02/27/2003 11:32 AM

To: Jodi Burgess/DC/USEPA/US@EPA

cc:

cc:

Subject: Revised Test Plan and Robust Summaries (Email 2 of 2)



Christopher Bradlee <bradlec@basf-corp.com> on 02/26/2003 11:31:45 AM

To: Oppt.ncic@epamail.epa.gov

cc:

Subject: Revised Test Plan and Robust Summaries (Email 2 of 2)

OPPT,

BASF Corporation is submitting its Revised Test Plan and Robust Summaries for the Dicamba and Acifluorfen Intermediates Category. These revisions address the U.S. EPA's comments posted on the ChemRTK HPV Challenge Program Web site on December 2, 2002.

Revised Robust Summaries

(See attached file: Revised\_Robust\_Summaries.zip)

Due to file size limitations the Cover Letter and Revised Test Plan were sent in a separate email.

Let me know if you have any questions or comments.

Regards,  
Christopher A. Bradlee  
Toxicologist  
BASF Corporation  
Corporate Ecology & Safety  
1609 Biddle Avenue  
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Revised\_Robust\_Summaries.zip

RECEIVED  
OPPT NCIC  
2003 FEB 27 AM 11:39

February 19, 2003

The Honorable Christine Todd Whitman  
Administrator  
U. S. Environmental Protection Agency  
Ariel Rios Building  
Room 3000, #1101-A  
1200 Pennsylvania Ave., N. W.  
Washington, DC 20460

Dear Administrator Whitman,

**Subject:** Revisions/Updates to the Robust Summaries and Test Plan for the Dicamba And Acifluorfen Intermediates Category.

BASF Corporation is hereby responding to the U.S. EPA's comments on Chemical RTK HPV Challenge Submission: Dicamba and Acifluorfen Intermediates Category posted on the ChemRTK HPV Challenge Program Web site on December 2, 2002. The U.S. EPA's comments can be broadly grouped in to two categories: 1) those addressing testing issues such as additional testing recommended by U.S. EPA and clarification of proposed OECD guidelines, and 2) those addressing clarification of language in the test plan and deficiencies in the robust summaries. BASF Corporation provides the following responses to the U.S. EPA's comments/questions based on these two groups:

### **Testing**

U.S. EPA Comment (1): The submitter needs to provide measured melting point data for 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid and for one representative salt for each category.

BASF Response (1): Measured melting point data will be provided for 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid; Dicamba, sodium salt; 2,5-Dichlorophenol, sodium salt; and 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, potassium salt.

U.S. EPA Comment (2): EPA agrees with the submitter's approach to boiling point and vapor pressure except that measured values are needed for 2,5-dichloroanisole.

BASF Response (2): Measured boiling point and vapor pressure data will be provided for 2,5-dichloroanisole.

U.S. EPA Comment (3): EPA agrees with the submitter's approach to partition coefficient and water solubility except that measured values are needed for 2,5-dichloroanisole, 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, and 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, potassium salt.

BASF Response (3): Measured data for partition coefficient and water solubility will be provided for 2,5-dichloroanisole, 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, and 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, potassium salt.

U.S. EPA Comment (4): The submitter needs to provide measured biodegradation data for 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid or its potassium salt. The submitter needs to specify the OECD Guideline it plans to use.

BASF Response (4): Measured biodegradation data for 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid using an OECD 301 Guideline will be provided.

U.S. EPA Comment (5): Ecological effects testing of an additional Group II member is needed.

BASF Response (5): Ecological effects testing for 2,5-Dichlorophenol, sodium salt, in addition to 2,5-Dichloroanisole, will be provided.

U.S. EPA Comment (6): The submitter needs to provide an algae study for a category III chemical or an appropriate analog.

BASF Response (6): An algae study will be provided for 3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid.

### **Test Plan and Robust Summaries**

U.S. EPA Comment (7): The submitter justified grouping acid and salt forms of compounds based partly on the basis of toxicokinetic data for dicamba free acid and three amine salts (test plan pp. 3, 5). This is reasonable, but the submitter needs to identify the salts.

BASF Response (7): The three dicamba amines salts tested in this study were dimethylamine, isopropylamine and diglycolamine. This information has been added to the Test Plan.

U.S. EPA Comment (8): In Table 4.2 of the test plan (page 24), the submitter indicates that 2,5-dichlorophenol has a calculated (EPIWIN) vapor pressure of 0.61 hPa. However, its robust summary reports a literature value of 0.08 hPa, supported by an EPIWIN value of 0.06 hPa. The submitter needs to address this discrepancy.

BASF Response (8): The discrepancy is a typo, and the measured value of 0.08 hPa should be used as the vapor pressure for 2,5-dichlorophenol. The table in Section 4.2 of the Test Plan was revised to reflect this new value.

U.S. EPA Comment (9): For dicamba, EPA suggests using a partition coefficient value of 2.21 at 25°C, which is the log  $K_{ow}$  for the neutral species.

BASF Response (9): The neutral species partition coefficient was added to the table in Section 4.1 of the Test Plan in place of the value for the ionized species.

U.S. EPA Comment (10): EPA located data for the biodegradation of 2,5-dichlorophenol using OECD method 301C and the Japanese MITI test (JAPAN 1992) that appear to satisfy the endpoint for this substance. The submitter needs to include this information in the test plan and summaries.

BASF Response (10): A copy of this publication has been ordered and a robust summary will be prepared and the results also added to the table in Section 4.2 of the Test Plan.

U.S. EPA Comment (11): Although the test plan states that there are mammalian toxicity data for 2,5-dichloroanisole (p. 14), no robust summaries were submitted and the data are not reflected in Tables 4 or 4.2. These data, if available, need to be summarized and submitted to EPA. If data are not available, the statement on page 14 needs to be revised.

BASF Response (11): There are no mammalian toxicity data available for 2,5-dichloroanisole. The statement of page 14 will be revised accordingly.

U.S. EPA Comment (12): Group 3-(2-Chloro-4-(trifluoromethyl)phenoxy)benzoic acid. The submitter incorrectly rated the first oral study (which reported an LD50 of 1170 mg/kg) as invalid, because the density of the oil was not reported. However, despite the difficulty in obtaining results based on the active ingredient, EPA considers the study to be adequate.

BASF Response (12): The robust summary will be modified so that this study is no longer considered invalid and the results will be added to the table in Section 4.3.

U.S. EPA Comment (13): A minor discrepancy in reporting of this EC50 in the test plan (p. 25) and IUCLID summary (p. 15), and as an LC50 elsewhere in the test plan (p18) needs to be corrected.

BASF Response (13): The language "LC50" was changed to "EC50" in the Test Plan.

U.S. EPA Comment (14): In some studies, it was unclear whether the test material was a simple technical grade solution or a formulated herbicide containing a high proportion (60 to 80%) of undefined ingredients. The submitter needs to identify such ingredients and discuss their known or suspected influence on the test results.

BASF Response (14): All studies conducted with dicamba and acifluorfen used a technical grade active ingredient. The test material was chosen to closely match that which is produced in manufacturing and be the most representative for human (and environmental) exposure. Unless specifically stated, the

reports did not test a pesticide formulation or other product that might be diluted or have other ingredients intentionally added.

U.S. EPA Comment (15): Group II. 2,5-Dichlorophenol. The robust summary did not report test substance purity or dose volume.

BASF Response (15): All available methodological details were included in the robust summary, as available.

U.S. EPA Comment (16): Group II. 2,5-Dichlorophenol. The robust summary for a 4-week inhalation bioassay in rats omitted the method of generating the test atmosphere.

BASF Response (16): All available methodological details were included in the robust summary, as available.

U.S. EPA Comment (17): Group III. Sodium acifluorfen. The robust summary for a guideline-like 90-day bioassay in rats dietarily exposed to Tackle 2AS (~20-21% a.i.) did not report the size of changes in body and organ weights or specify the 'liver damage' observed in high-dose rats.

BASF Response (17): The size of the changes (%) in body and organ weight changes varied for each organ and any significant differences were discussed in the robust summary. The specific liver damage is discussed thoroughly in the robust summary Results section, including both gross pathology and histopathology findings. The unspecific term 'liver damage' was used only in the Conclusion section to indicate a target organ.

U.S. EPA Comment (18): (Dicamba) The robust summary for a negative GLP-compliant in vitro chromosomal aberration assay provided sufficient information to evaluate the study but omitted some methodological details (culture harvest time and use of colcemid).

BASF Response (18): Colcemid was added to the flasks at a final concentration of 10 ug/mL. This information was added to the robust summary. All other available methodological details were included in the robust summary, as available.

U.S. EPA Comment (19): Group III. 3-(2-Chloro-4-(trifluoromethyl)phenoxy)benzoic acid. Two identical robust summaries were submitted for a negative guideline-like assay for mutation in bacteria.

BASF Response (19): The duplicate robust summary was eliminated.

U.S. EPA Comment (20): Group I. Dicamba. The robust summary for a GLP/OECD 2-generation study in rats did not report the size of the observed body and organ weight effects. In the results section, the dose for the F1 females was apparently incorrectly converted from 1500 ppm to 35 mg/kg/day.

BASF Response (20): The size of the changes (%) in body and organ weight changes varied for each organ and any significant differences were discussed in the robust summary. The dose for the F1 females should be 135 mg/kg/day. This typo was corrected in the robust summary.

U.S. EPA Comment (21): Group I. Dicamba. The robust summary for a GLP-compliant, EPA guideline developmental toxicity study in rats exposed to technical dicamba by gavage provided most study details, but did not specify the size of the body and organ weight effects or the percentage of high-dose fetuses that showed incomplete ossification of facial and/or parietal bones.

BASF Response (21): The size of the changes (%) in body and organ weight changes varied for each organ and any significant differences were discussed in the robust summary. Only one fetus of the high-dose group showed incomplete ossification of facial and/or parietal bones. This information was added to the robust summary.

U.S. EPA Comment (22): Sodium acifluorfen. The summary incorrectly stated that the high dose was a NOAEL for fetal toxicity/teratogenicity. The data indicate that the fetal NOAEL was 20 mg/kg/day and the fetal LOAEL was 90 mg/kg/day for significantly reduced pup weight and significantly increased visceral and skeletal abnormalities; resorptions were significantly increased at 180 mg/kg/day.

BASF Response (22): The robust summary and Test Plan will be changed to reflect a fetal NOAEL of 20 mg/kg/day.

U.S. EPA Comment (23): (Dicamba) Fish - Missing study details included water hardness, loading, signs of toxicity per concentration, and photoperiod.

BASF Response (23): This was a saltwater test and, therefore, hardness is not an appropriate parameter to measure. The salinity was 27 ppt, as indicated in the robust summary. The loading could be determined from information contained in the robust summary (10 fish per treatment, 15L per treatment). Signs of toxicity in this study were mortality, which was covered in the robust summary. Photoperiod was not reported but was likely to be approximately 16:8 hrs, light:darkness.

U.S. EPA Comment (24): (Dicamba) Invertebrates - Missing study details included the following: test substance concentrations, number of organisms per concentration, use of proper controls, signs of toxicity per concentration, control response, dissolved oxygen, and whether or not analytical monitoring was performed.

BASF Response (24): All available methodological details were included in the robust summary, as available.

U.S. EPA Comment (25): (Group III) *Fish*. 3-(2-Chloro-4-(trifluoromethyl)phenoxy)benzoic acid in *Pimephales promelas*. Missing study details included test substance purity, and photoperiod. The summary did not indicate whether or not analytical monitoring was performed.

**BASF Response (25):** All available methodological details were included in the robust summary, as available. The robust summary did explicitly state in the Reliability section "No analyses were performed to confirm the nominal test concentrations."

**U.S. EPA Comment (26):** (Group III) *Algae*. If available the 72- or 96-hour duration and definitive EC50 values should be provided and clearly stated on the basis of 100% active ingredient (a.i.).

**BASF Response (26):** Where available the 72- or 96-hour duration and definitive EC50 values are provided in and clearly stated on the basis of 100% active ingredient (a.i.).

The Test Plan and robust summaries have been revised to incorporate the changes noted above, including changes to Tables 3 – 5 and Section 4.0 SIDS Data Matrix. The following is a summary of the testing that was proposed by BASF Corporation in the original Test Plan submission (December 2001) and the additional testing as recommended by the U.S. EPA:

**Testing Proposed by BASF Corporation in Original Test Plan Submission (December 2001).**

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**Group I**

1918-00-9 Dicamba Biodegradation (OECD 301)

**Group II**

1984-58-3 2,5-Dichloroanisole Biodegradation (OECD 301)

1984-58-3 2,5-Dichloroanisole Acute fish (OECD 203)

1984-58-3 2,5-Dichloroanisole Acute daphnia (OECD 202)

1984-58-3 2,5-Dichloroanisole Algae test (OECD 201)

1984-58-3 2,5-Dichloroanisole Combined repeated dose reproduction study (OECD 422)

**Group III**

62476-59-9 Acifluorfen, sodium salt Biodegradation (OECD 301)

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**Additional Testing Recommended by U.S. EPA in Review of Test Plan (November 2002)**

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**Group I**

1982-69-0 Dicamba, sodium salt Melting Point (OECD 102)

**Group II**

1984-58-3 2,5-Dichloroanisole Boiling Point (OECD 103)

1984-58-3 2,5-Dichloroanisole Vapor Pressure (OECD 104)

1984-58-3 2,5-Dichloroanisole Partition Coefficient (OECD 107)

1984-58-3	2,5-Dichloroanisole	Water Solubility (OECD 105)
52166-72-0	2,5-Dichlorophenol, sodium salt	Melting Point (OECD 102)
52166-72-0	2,5-Dichlorophenol, sodium salt	Acute fish (OECD 203)
52166-72-0	2,5-Dichlorophenol, sodium salt	Acute daphnia (OECD 202)
52166-72-0	2,5-Dichlorophenol, sodium salt	Algae test (OECD 201)
<b>Group III</b>		
63734-62-3	Benzoic acid, 3-[2-chloro-4-(trifluoromethyl)phenoxy]	Melting Point (OECD 102)
63734-62-3	Benzoic acid, 3-[2-chloro-4-(trifluoromethyl)phenoxy]	Partition Coefficient (OECD 107)
63734-62-3	Benzoic acid, 3-[2-chloro-4-(trifluoromethyl)phenoxy]	Water Solubility (OECD 105)
63734-62-3	Benzoic acid, 3-[2-chloro-4-(trifluoromethyl)phenoxy]	Biodegradation (OECD 301)
63734-62-3	Benzoic acid, 3-[2-chloro-4-(trifluoromethyl)phenoxy]	Algae test (OECD 201)
72252-48-3	3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, potassium salt	Melting Point (OECD 102)
72252-48-3	3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, potassium salt	Partition Coefficient (OECD 107)
72252-48-3	3-(2-chloro-4-(trifluoromethyl)phenoxy)benzoic acid, potassium salt	Water Solubility (OECD 105)

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BASF Corporation plans to initiate testing under this Plan, and final robust summaries will be prepared and submitted to the U.S. EPA that cover the results of this testing. Please contact me at (734) 324-6867 if you have any questions or comments.

Sincerely,

Christopher A. Bradlee  
Toxicologist  
BASF Corporation  
Corporate Ecology and Safety