

US EPA ARCHIVE DOCUMENT

1-22B-114  
6/4/99

MRID No. 447693-01

**DATA EVALUATION RECORD**  
**§ 72-2 - ACUTE EC<sub>50</sub> TEST WITH A FRESHWATER INVERTEBRATE**

1. CHEMICAL: Petroleum distillate PC Code No.: 063503

2. TEST MATERIAL: GB-1111 Purity: 98.75%

3. CITATION:  
Authors: Kurt R. Drottar and Henry O. Krueger  
Title: GB-1111: A 48-Hour Static Acute Toxicity Test with the Cladoceran (*Daphnia magna*)  
Study Completion Date: February 19, 1999  
Laboratory: Wildlife International Ltd., Easton, MD  
Sponsor: Golden Bear Oil Specialties, Inc., Los Angeles, CA  
Laboratory Report ID: 481A-103  
MRID No.: 447693-01  
DP Barcode: D255299

4. REVIEWED BY: Karl Bullock, M.S., Environmental Scientist, Golder Associates Inc.

Signature: *Kal Bullock* Date: 6/1/99

APPROVED BY: Pim Kosalwat, Ph.D., Senior Scientist, Golder Associates Inc.

Signature: *P. Kosalwat* Date: 6/1/99

5. APPROVED BY:

Signature: Date:

6. STUDY PARAMETERS:

Age of Test Organism: <24 hours  
Definitive Test Duration: 48 hours  
Study Method: Static  
Type of Concentrations: Initial measured

7. CONCLUSIONS: This study is scientifically sound but does not fulfill the guideline requirements. Based on initial measured concentrations, the 48-hour EC<sub>50</sub> value of 0.10 ppm ai classifies GB-1111 as highly toxic to *Daphnia magna*. The NOEC was determined to be 0.023 ppm ai based on nominal concentrations.

NOTE: BECAUSE THERE WAS CONTROL MORTALITY, AND NONE OF THE LOWER CONCENTRATIONS PRODUCED ZERO MORTALITY, THE DATA HAS BEEN SUBJECTED TO ABBOTT'S CORRECTION.

Karl Bullock Petroleum distillate Daphnia 05-13-99

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CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
.28	19	17	89.4737	3.643036E-02
.19	19	15	78.9474	.9605406
.13	19	11	57.8947	32.3803
.078	19	6	31.5789	8.353423
.055	19	4	21.0526	.9605406

THE BINOMIAL TEST SHOWS THAT .055 AND .19 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS, BECAUSE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS GREATER THAN 95 PERCENT.

AN APPROXIMATE LC50 FOR THIS SET OF DATA IS .1117418

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS	
4	.1913664	.1076023	7.911771E-02	.1366589

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
2	.1540971	1	.9848901

SLOPE = 3.00846  
 95 PERCENT CONFIDENCE LIMITS = 1.827483 AND 4.189437

LC50 = .1075031  
 95 PERCENT CONFIDENCE LIMITS = 8.336689E-02 AND .1340108

LC10 = 4.067037E-02  
 95 PERCENT CONFIDENCE LIMITS = 1.939364E-02 AND 5.786098E-02

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