

US EPA ARCHIVE DOCUMENT

11/22/96

MRID No. 440031-03

DATA EVALUATION RECORD
§ 72-2 - ACUTE EC₅₀ TEST WITH A FRESHWATER INVERTEBRATE

1. **CHEMICAL:** Zinc Silicate + Silver **PC Code No.:** 008103 &
(TLF-8227) 072501
2. **TEST MATERIAL:** TLF-8227 **Purity:** 0.80% ZnSiO₃
0.91% Ag
98.29% Inerts
3. **CITATION:**
 Authors: G.C. Kreamer
 Title: Static, Acute, 48-Hour EC₅₀ of TLF-8227
 to *Daphnia magna*.
Study Completion Date: August 3, 1995
 Laboratory: Haskell Laboratory for Toxicology and
 Industrial Medicine, Newark, DE
 Sponsor: E.I. du Pont de Nemours and Company,
 Wilmington, DE
 Laboratory Report ID: 511-93
 MRID No.: 440031-03
 DP Barcode: D230591
4. **REVIEWED BY:** Max A. Feken, M.S., Environmental Toxicologist,
 KBN Engineering and Applied Sciences, Inc.,
Signature: *Max A. Feken for MAF* **Date:** 11/20/96
APPROVED BY: Pim Kosalwat, Ph.D., Senior Scientist,
 KBN Engineering and Applied Sciences, Inc.,
Signature: *P. Kosalwat* **Date:** 11/20/96
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: Nominal
7. **CONCLUSIONS:** This study is scientifically sound but does not
 fulfill the guideline requirements. An EC₅₀ of 0.70 ppm
 (based on nominal concentrations of the whole test material)
 classifies TLF-8227 as highly toxic to *Daphnia magna*.



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KOSALWAT TLF-8227 DAPHNIA MAGNA 11-20-96

CONC.	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB. (PERCENT)
1	20	16	80	.5908966
.6	20	6	30	5.765915
.36	20	2	10	2.012253E-02
.22	20	1	5	2.002716E-03
.13	20	0	0	9.536742E-05
.08	20	0	0	9.536742E-05

THE BINOMIAL TEST SHOWS THAT .36 AND 1 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 .7326691

RESULTS CALCULATED USING THE MOVING AVERAGE METHOD

SPAN	G	LC50	95 PERCENT CONFIDENCE LIMITS
2	.1713617	.7183996	.5981798 .9295012

RESULTS CALCULATED USING THE PROBIT METHOD

ITERATIONS	G	H	GOODNESS OF FIT PROBABILITY
5	.1531625	1	.7007496

SLOPE = 4.117836

95 PERCENT CONFIDENCE LIMITS = 2.506281 AND 5.729392

LC50 = .7009611

95 PERCENT CONFIDENCE LIMITS = .5799283 AND .9059676

LC10 = .3445716

95 PERCENT CONFIDENCE LIMITS = .2279509 AND .4307792
