

# I U C L I D

## Data Set

**Existing Chemical** : ID: 328-84-7  
**CAS No.** : 328-84-7  
**EC No.** : 206-337-1  
**Common name** : 3,4-Dichlorobenzotrifluoride  
**Generic name** : DCBTF  
**Molecular Weight** : 215 g/g mole

**Producer related part**  
**Company** : The Dow Chemical Company  
**Creation date** : 25.04.2005

**Substance related part**  
**Company** : The Dow Chemical Company  
**Creation date** : 25.04.2005

**Status** :  
**Memo** :

**Printing date** : 24.08.2005  
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**Chapter (profile)** : Chapter: 1, 2, 3, 4, 5, 6, 7, 8, 10  
**Reliability (profile)** : Reliability: without reliability, 1, 2, 3, 4  
**Flags (profile)** : Flags: without flag, confidential, non confidential, WGK (DE), TA-Luft (DE), Material Safety Dataset, Risk Assessment, Directive 67/548/EEC, SIDS

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### 1.0.1 APPLICANT AND COMPANY INFORMATION

**Type** : cooperating company  
**Name** : Dow Agrosciences PLC  
**Contact person** : Nancy Berdasco  
**Date** : 25.04.2005  
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**Homepage** :

15.08.2005

### 1.0.2 LOCATION OF PRODUCTION SITE, IMPORTER OR FORMULATOR

**Type** : cooperating company  
**Name of plant** :  
**Street** :  
**Town** :  
**Country** :  
**Phone** :  
**Telefax** :  
**Telex** :  
**Cedex** :  
**Email** :  
**Homepage** :

02.05.2005

### 1.0.3 IDENTITY OF RECIPIENTS

### 1.0.4 DETAILS ON CATEGORY/TEMPLATE

#### 1.1.0 SUBSTANCE IDENTIFICATION

**IUPAC Name** : 3,4-dichlorobenzotrifluoride  
**Smiles Code** :  
**Molecular formula** : C7 H3 CL2 F3  
**Molecular weight** : 215 g/g mole  
**Petrol class** :

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### 1.1.1 GENERAL SUBSTANCE INFORMATION

**Purity type** :  
**Substance type** : organic  
**Physical status** : liquid  
**Purity** : % v/v  
**Colour** : colorless  
**Odour** : aromatic

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### 1.1.2 SPECTRA

## 1.2 SYNONYMS AND TRADENAMES

**1,2-Dichloro-(trifluoromethyl)benzene**

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**3,4 DCBTF**

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**3,4 diCBTF**

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**3,4 dichloro-trifluorotolene**

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**toluene-3,4 dichlor, alpha, alpha, alpha trifluoro**

22.08.2005

## 1.3 IMPURITIES

**Purity** :  
**CAS-No** : 328-84-7  
**EC-No** : 206-337-1  
**EINECS-Name** : 3,4-dichloro-alpha,alpha,alpha-trifluorotoluene  
**Molecular formula** :  
**Value** :

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## 1.4 ADDITIVES

Purity type :  
CAS-No : 328-84-7  
EC-No : 206-337-1  
EINECS-Name : 3,4-dichloro-alpha,alpha,alpha-trifluorotoluene  
Molecular formula : C7 H3 CL2 F3  
Value :  
Function of additive :

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## 1.5 TOTAL QUANTITY

### 1.6.1 LABELLING

### 1.6.2 CLASSIFICATION

### 1.6.3 PACKAGING

## 1.7 USE PATTERN

Type of use : industrial  
Category : Agricultural industry

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### 1.7.1 DETAILED USE PATTERN

Industry category : 1 Agricultural chemicals  
Use category : 38 Plant protection products, agricultural  
Extra details on use category : No extra details necessary  
No extra details necessary  
Emission scenario document : not available  
Product type/subgroup :  
Tonnage for Application :  
Year :  
Fraction of tonnage for application :  
Fraction of chemical in formulation :  
Production : :  
Formulation : :  
Processing : :  
Private use :  
Recovery :

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## 1.7.2 METHODS OF MANUFACTURE

## 1.8 REGULATORY MEASURES

### 1.8.1 OCCUPATIONAL EXPOSURE LIMIT VALUES

### 1.8.2 ACCEPTABLE RESIDUES LEVELS

### 1.8.3 WATER POLLUTION

### 1.8.4 MAJOR ACCIDENT HAZARDS

### 1.8.5 AIR POLLUTION

### 1.8.6 LISTINGS E.G. CHEMICAL INVENTORIES

### 1.9.1 DEGRADATION/TRANSFORMATION PRODUCTS

Type :  
CAS-No : 328-84-7  
EC-No : 206-337-1  
EINECS-Name : 3,4-dichloro-alpha,alpha,alpha-trifluorotoluene  
IUCLID Chapter :

25.04.2005

### 1.9.2 COMPONENTS

Selected heading :  
CAS-No : 328-84-7  
EC-No : 206-337-1  
EINECS-Name : 3,4-dichloro-alpha,alpha,alpha-trifluorotoluene

25.04.2005

### 1.10 SOURCE OF EXPOSURE

## 1.11 ADDITIONAL REMARKS

**Memo** : Additional article

**Remark** : This report assesses the worker exposure and environmental releases of 3,4 DCBTF during manufacturing, process, and use operations in support of potential test rule activities. Most of the information is based on professional judgement, previous PMN submitted by companies, and industry contacts.

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## 1.12 LAST LITERATURE SEARCH

**Type of search** : Internal and External

**Chapters covered** :

**Date of search** :

27.04.2005

## 1.13 REVIEWS

## 2.1 MELTING POINT

**Value** : = -12 °C  
**Sublimation** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4

15.08.2005 (1)

## 2.2 BOILING POINT

**Value** : = 173.5 °C at  
**Decomposition** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4

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**Value** : = 170 °C at  
**Decomposition** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4

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## 2.3 DENSITY

### 2.3.1 GRANULOMETRY

## 2.4 VAPOUR PRESSURE

**Value** : = 1.6 at 20 °C  
**Decomposition** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4

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**Value** : = 2 at 25 °C

**Decomposition** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4

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## 2.5 PARTITION COEFFICIENT

### 2.6.1 SOLUBILITY IN DIFFERENT MEDIA

**Solubility in** : Water  
**Value** : at °C  
**pH value** :  
**concentration** : at °C  
**Temperature effects** :  
**Examine different pol.** :  
**pKa** : at 25 °C  
**Description** :  
**Stable** :

**Remark** : Solubility negligible.  
 27.04.2005 (1)

**Solubility in** : Water  
**Value** : = mg/l at 23 °C  
**pH value** :  
**concentration** : at °C  
**Temperature effects** :  
**Examine different pol.** :  
**pKa** : at 25 °C  
**Description** :  
**Stable** :  
**Deg. product** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS: PCR Lot No. 9275; purity 98.2 area percent by GC

**Method** : One liter of Milli-Q water, contained in a volumetric flask was saturated with 3,4 DCBTF. The solution was slowly stirred by means of a Teflon stirring bar at 23 C for three days before the first sampling. Before sampling, the flask was removed from the magnetic stirrer and the 3,4 DCBTF was allowed to settle for 10-15 minutes.

A 50 ml aliquot was withdrawn from the top of the 3,4 DCBTF/H<sub>2</sub>O solution and centrifuged for 15 minutes @2000 rpm and 23 C. Ten ml of the centrifuged solution was removed from the top of the tube and transferred to a 100 ml volumetric flask and brought to volume with Milli-Q water. All water used for the test are previously analyzed and determined to be free of impurities.

The pH of the diluted solution was then adjusted to 4 with concentrated HCl and extracted 3 times (5 min. each) with 10 ml 15% MeCl<sub>2</sub>/Hexane. The ~30 ml extract was collected in a 100 ml volumetric flask and placed under a nitrogen stream for approximately 15 minutes to blow off the MeCl<sub>2</sub>. The extract was then brought to volume (100 ml) with hexane, transferred to a brown 8 ounce bottle and dried by adding sodium sulfate. The dried extract was then diluted with hexane in order that the sample peak was the approximate size of the 3,4 DBCTF standard peak which the analysis was calibrated.

**Remark** : Eight samples were taken over a period of two weeks.  
**Result** : The average 3,4-DCBTF solubility obtained was 11.6 ug/ml (ppm) with a standard deviation of 1.0 ug/ml.  
**Test condition** : The solubility of 3,4-DBCTF in water has been determined by injection of the solvent extracted water into a gas chromatograph system.  
**Reliability** : (2) valid with restrictions  
**Flag** : Critical study for SIDS endpoint  
08.07.2005 (5)

## 2.6.2 SURFACE TENSION

## 2.7 FLASH POINT

**Value** : 77 °C  
**Type** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : as prescribed by 1.1 - 1.4

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## 2.8 AUTO FLAMMABILITY

## 2.9 FLAMMABILITY

## 2.10 EXPLOSIVE PROPERTIES

## 2.11 OXIDIZING PROPERTIES

## 2.12 DISSOCIATION CONSTANT

**2.13 VISCOSITY**

**2.14 ADDITIONAL REMARKS**

### 3.1.1 PHOTODEGRADATION

### 3.1.2 STABILITY IN WATER

### 3.1.3 STABILITY IN SOIL

### 3.2.1 MONITORING DATA

### 3.2.2 FIELD STUDIES

### 3.3.1 TRANSPORT BETWEEN ENVIRONMENTAL COMPARTMENTS

### 3.3.2 DISTRIBUTION

### 3.4 MODE OF DEGRADATION IN ACTUAL USE

### 3.5 BIODEGRADATION

<b>Type</b>	:	aerobic
<b>Inoculum</b>	:	other:a mixed microbial population was isolated from a fertile garden source.
<b>Concentration</b>	:	2 mg/l related to Test substance 5 mg/l related to Test substance
<b>Contact time</b>	:	28 day(s)
<b>Degradation</b>	:	(±) % after
<b>Result</b>	:	under test conditions no biodegradation observed
<b>Control substance</b>	:	Benzoic acid, sodium salt
<b>Kinetic</b>	:	% %
<b>Deg. product</b>	:	no
<b>Method</b>	:	EPA OTS 796.3200
<b>Year</b>	:	
<b>GLP</b>	:	yes
<b>Test substance</b>	:	other TS:clear, colorless liquid - purity 99.5% as reported by the Sponsor, Occidental Chemical Corporation
<b>Remark</b>	:	A labelling error had occurred (5.0 mg/l nominal concentration values were lower than 2.0 g/l nominal concentration values).
<b>Result</b>	:	Gas chromatographic analyses of Day 0 DCBTF samples indicated that a labeling error had occurred (5.0 mg/L nominal concentration values were lower than 2.0 mg/L nominal

concentration values). Results of gas chromatographic analyses of DCBTF solutions indicated that DCBTF remained at constant levels, substantially below the desired nominal concentrations, throughout the 28 day test period. The complete degradation of sodium benzoate was demonstrated to occur within five days under the conditions of this test, indicating a viable microbial population was isolated. Values obtained for percentage biodegradation of DCBTF based upon oxygen depletion are inconsistent with measured concentrations, and are believed to have resulted from the low measured initial concentration. Oxygen depletion in the control blanks and inoculum blanks was within acceptable levels at the conclusion of the test period, less than 0.4 and 0.6 mg O<sub>2</sub>/L after 28 days, respectively.

**Test condition**

: INOCULUM/TEST ORGANISM

- Type of sludge: Fertile garden source
- Species/strain: Mixed microbial population
- Source: Fertile garden source collected locally in New York
- Sampling site: Garden soil - not listed
- Feeding: Mineral nutrient solution
- Method of cultivation: Not indicated
- Preparation of inoculum: A suspension of 100 g soil in 1.0 L of chlorine-free tap water was prepared, allowed to settle for 30 minutes, and the supernatant was filtered through a coarse filter. The first 200 mL of filtrate was discarded and the remainder was maintained under aerobic conditions until used as the inoculum.
- Pretreatment: The prepared inoculum was used for the test on the same day the soil was collected.

TEST SYSTEM

- Culturing apparatus: BOD bottles
- Number of culture flasks per concentration: Each test system consisted of an individual BOD bottle containing the mineral nutrient solution, a small population of soil microorganisms and the test or reference materials.
- Aeration device: Aerated bottled water
- Measuring equipment: An oxygen meter equipped with a membrane electrode, gas chromatography and direct aqueous high performance liquid chromatography was used.
- Closed vessels used: A total of 48 BOD bottles were used for this test, oxygen blanks (mineral nutrient solution without inoculum or test material), inoculum blanks (mineral nutrient solution with inoculum but without test material), sodium benzoate at 2 and 5 mg/L and DCBTF at 2 and 5 mg/L. A parallel series of BOD bottles were established for each treatment or control to allow for duplicate analyses at each of the four intervals.

INITIAL TEST SUBSTANCE CONCENTRATION: Nominal concentrations of 2 and 5 mg/L.

METHOD OF PREPARATION OF TEST SOLUTION: DCBTF was added directly to the nutrient solutions via a microliter syringe to achieve the desired nominal concentrations. A weighed amount of sodium benzoate was added directly to the nutrient solution.

DURATION OF THE TEST: 28 days

ANALYTICAL PARAMETER: The parameters measured consisted of oxygen depletion and chemical concentrations.

SAMPLING: Days 0, 5, 15 and 28

TEST CONDITIONS

- Composition of medium: Not provided

- Test temperature: 20 plus/minus 1 C
- Aeration of dilution water: Oxygen rich bottled water was prepared by purging room atmosphere through the water with the use of a fritted glass disc for 20 minutes. Air saturated water was allowed to stand at 20 plus/minus 1 C for a minimum of 20 hours prior to use.
- Other relevant factors: Labelling error had occurred; 5.0 mg/L nominal concentrations values were lower than 2.0 mg/L nominal concentration values.

CONTROLS: Control blanks and inoculum blanks

REFERENCE SUBSTANCE: Sodium benzoate

**Conclusion** : DCBTF was determined not to be readily biodegradable under the conditions of this test.

Measured to nominal concentration relations at the levels tested were markedly influenced by the high vapor pressure of the test material.

**Flag** : Critical study for SIDS endpoint

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### 3.6 BOD5, COD OR BOD5/COD RATIO

### 3.7 BIOACCUMULATION

### 3.8 ADDITIONAL REMARKS

#### 4.1 ACUTE/PROLONGED TOXICITY TO FISH

<b>Type</b>	:	static
<b>Species</b>	:	Salmo gairdneri (Fish, estuary, fresh water)
<b>Exposure period</b>	:	96 hour(s)
<b>Unit</b>	:	mg/l
<b>NOEC</b>	:	< 5.6 measured/nominal
<b>LC50</b>	:	= 11.9 measured/nominal
<b>Limit test</b>	:	
<b>Analytical monitoring</b>	:	no data
<b>Method</b>	:	other: EPA-660/3-75-009
<b>Year</b>	:	1975
<b>GLP</b>	:	no data
<b>Test substance</b>	:	other TS:Purity not listed; clear, acetone-soluble liquid
<b>Remark</b>	:	<p>A range-finding test was first conducted in disposable animal containers, each containing four liters of soft reconstituted water. Range-finding concentrations were prepared by adding measured volumes of stock solution to the containers and mixing thoroughly. An additional container, with 100% dilution water, served as control; another, with a solution of acetone in dilution water at the same acetone concentration as in the highest range-finding concentration, served as solvent. Four test organisms were introduced into each container. Mortalities were recorded every 24 hours for 96 hours; water chemistry data were not collected.</p>
<b>Result</b>	:	<p>Mortalities were observed (4) in the 100 and 50 mg/l concentrations at 24, 48, 72 and 96 hours. The remaining concentrations, 1, 5, and 10 mg/l did not have mortalities.</p> <p>RESULTS: EXPOSED</p> <p>- Nominal concentrations: 5.6, 10.0, 18.0, 32.0 and 56.0 mg/l.</p> <p>- Effect data:</p> <p>Table I. Mortality data, with number of fish (percentage) at 24 / 48 / 72 / 96 hours and different test substance concentrations</p> <p>5.6 mg/l: 0 / 0 / 0 / 0 10.0 mg/l: 20 / 20 / 20 / 20 18.0 mg/l: 30 / 100 / 100 / 100 32.0 mg/l: 100 / 100 / 100 / 100 56.0 mg/l: 100 / 100 / 100 / 100</p> <p>- Other effects:</p> <p>Table II. Observations were conducted one each surviving concentration at 24 / 48 / 72 / 96 hours</p> <p>5.6 mg/l: general behaviour-irritated / general behaviour-irritated / general behaviour-quiescent and surfacing /general behaviour-surfacing 10.0 mg/l: swimming-erractic; pigmentation-dark colored; respiration-labored / swimming-ceased; pigmentation-dark colored; respiration-labored / general behaviour-irritated;</p>

swimming-gyrating and skittering; pigmentation-dark colored /  
general behaviour-surfacing; swimming-erractic  
18.0 mg/l: general behaviour-tetanous; swimming-ceased;  
pigmentation-varidiscolored; respiration-labored / 100% mortality /  
100% mortality / 100% mortality

32.0 mg/l: 100% mortality

56.0 mg/l: 100% mortality

RESULTS: CONTROL

**Test condition**

- : TEST ORGANISMS
- Number/percentage of animals showing adverse effects: 0%
  - Strain: Rainbow trout, *Salmo gairdneri* Richardson
  - Supplier: Union Carbide Environmental Services cultured from eggs obtained from a commercial hatchery in Washington (USA)
  - Age/size/weight/loading: Size 40 (34-44) mm; Weight 0.44 (0.27 - 0.56) grams
  - Feeding: Forty-eight hours before starting the test the fish were taken off feed, and no food was administered thereafter.

STOCK AND TEST SOLUTION AND THEIR PREPARATION

- Dispersion: Stock solution of DCBTF in reagent grade acetone was prepared by weight to a precision of 0.1 mg.
- Vehicle, solvent: Acetone

DILUTION WATER

- Source: From a well on the Tarrytown, New York site.
- Alkalinity: 31 mg/l as CaCO<sub>3</sub>
- Hardness: 46 mg/l as CaCO<sub>3</sub>
- pH: 7.54
- Conductance: 150 umhos/cm

TEST SYSTEM

- Test type: Static acute toxicity
- Concentrations: control-100% dilution water, solvent control-solution of acetone in dilution water , 1.0 mg/l, 5.0 mg/l, 10.0 mg/l, 50.0 mg/l, and 100.0 mg/l.
- Exposure vessel type: chemically clean glass jars
- Number of replicates: Replicate concentrations were not used.
- Dissolved oxygen, pH and Test temperature: At the beginning of the test, and every 24 hours thereafter, dissolved oxygen and pH of the control, solvent control and each test concentration, and the temperature of the water bath were determined.

DURATION OF THE TEST: 96 hour

TEST PARAMETER: Mortalities, abnormal behavioral responses

SAMPLING: Every 24 hours

MONITORING OF TEST SUBSTANCE CONCENTRATION:

Nominal test material concentrations - 5.6, 10.0, 18.0, 32.0, and 56 mg/l. Control - 100% dilution water; another, with a solution of acetone in dilution water at the same acetone concentration as in the highest test concentration, served as solvent control.

**Test substance**

- : When DCBTF was added to the test containers, oily droplets were observed on the surface of all concentrations.

**Conclusion**

- : Under the conditions of this study, the 96 hour LC<sub>50</sub> for 3,4

DBCTF to rainbow trout is 11.9 mg/l. This value is based on nominal concentrations of test material in soft reconstituted water.

**Flag** : Critical study for SIDS endpoint (7)  
22.08.2005

**Type** : flow through  
**Species** : Pimephales promelas (Fish, fresh water)  
**Exposure period** : 96 hour(s)  
**Unit** : mg/l  
**NOEC** : < .6 measured/nominal  
**LC50** : ca. measured/nominal  
**LC100** : = 3.5 measured/nominal  
**LC50-48 h** : 3.2  
**LC50-72h** : 2.3  
**LC50-96h** : 2.3  
**Limit test** :  
**Analytical monitoring** : yes  
**Method** : other:ASTM-Standard E729-80, 25 pp. and EPA-Draft June 17, 1985  
**Year** : 1985  
**GLP** : yes  
**Test substance** : other TS:99.5% pure,clear, colorless

**Remark** : Each replicate solution was sampled and analyzed for 3,4-DCBTF, as active ingredient (A.I.) concentration at test initiation and on day 4 of the exposure period. Based on the results of these analyses, the mean measured test concentrations were 3.5, 2.2, 1.5, 0.90 and 0.60 mg A.I./liter 3,4-DCBTF.

**Result** : During a preliminary flow-through exposure, fathead minnow were exposed to measured concentrations of 3,4-DCBTF from 5.5 to 0.72 mg/l. After 72 hours 100% mortality was observed at the 5.5 mg/l level. During the same period, mortality ranging from 80 to 0% was recorded in treatment levels of < 5.5 mg/l 3,4-DCBTF. Throughout the exposure, no mortalities or adverse effects were observed among the control organisms. Based on these results, the nominal concentrations were selected for the definitive study.

**Test condition** : Following 96 hours of exposure, 100% mortality was observed in the highest mean measured concentration of 3,4-DCBTF tested. The percent mortality in the remaining treatment levels ranged from 30 to 0% and followed the concentration gradient established and decreased as the concentration of test material decreased.  
 : Twenty organisms were exposed in duplicate test aquaria. Nominal concentrations of 10, 6.5, 4.2, 2.7 and 1.8 mg/l; dilution water control and a solvent (acetone) control.

**TEST ORGANISMS**  
 - Strain: Fathead minnow (Pimephales promelas)  
 - Supplier: Springborn Life Sciences, Inc. cultures: Wareham, Massachusetts USA.  
 - Wild caught: No  
 - Age/mean size/mean weight/loading: Not available/48 millimeters/1.20 grams/0.13 g of biomass per loiter of flowing test solution per day.  
 - Feeding: Dry commercial pelleted food, ad libitum, daily except

during the 48 hours prior to testing.

- Pretreatment: Not applicable

- Feeding during test:

DILUTION WATER

- Source: Well water

- Alkalinity: 20 - 23 mg/L

- Hardness: 26-32 mg/L CaCO<sub>3</sub>

- pH: 7.1 - 7.2

- Conductance: 100 - 130 umhos/cm

- Holding water: Similar to dilution water

TEST SYSTEM

- Test type: Flow through

- Concentrations: 5, one dilution water control and one solvent control

**Conclusion** : Based on criteria established by U.S. EPA (1985), 3,4-DCBTF is classified as moderately toxic to fathead minnow.

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**Type** : flow through  
**Species** : *Salmo gairdneri* (Fish, estuary, fresh water)  
**Exposure period** : 96 hour(s)  
**Unit** : mg/l  
**NOEC** : = .52 measured/nominal  
**LC50** : ca. 1.9 - 2.2 calculated  
**Limit test** :  
**Analytical monitoring** : yes  
**Method** : other:EPA 797.1050  
**Year** : 1985  
**GLP** : yes  
**Test substance** : other TS:99.5% pure; clear, colorless liquid

**Result** : RESULTS: EXPOSED  
- Mean measured concentrations: Test initiation and on day 4 of the exposure period - 3.4, 1.4, 0.83, 0.52 and 0.34 mg A.I./liter 3,4-DCBTF  
- Effect data (Mortality):  
Table 1: Mean Mortality data on two replicates, with number of fish (percentage) at 24/ 48/ 72 /96 hours and different test substance concentrations

0.34 mg A.I./L: 20 (0) / 20 (0) / 20 (0) / 20 (0)

0.52 mg A.I./L: 20 (0) / 20 (0) / 20 (0) / 20 (0)

0.83 mg A.I./L: 20 (0) / 20 (0) / 20 (0) / 20 (0)

1.4 mg A.I./L: 20 (0) / 20 (10) / 20 (15) / 20 (15)

3.4 mg A.I./L: 20 (60) / 20 (90) / 20 (100) / 20 (100)

- Concentration / response curve:

- Effect concentration vs. test substance solubility:

- Other effects:

Table 2: Clinical observations at 24/ 48/ 72 /96 hours and different test substance concentrations

0.34 mg A.I./L: 0 / 0 / 0 / 0

0.52 mg A.I./L: 0 / 0 / 0 / 0

0.83 mg A.I./L: C,D,E / C,E,F / C,E,F,G / A,C,G

1.4 mg A.I./L: B,C / C,E,F,G / A,C / A,C  
3.4 mg A.I./L: A / A / -- / --

A= All fish exhibited a complete loss of equilibrium  
B= All fish exhibited a partial loss of equilibrium  
C= All fish exhibited a darkened pigmentation  
D= Several fish were lethargic  
E= Several fish exhibited a partial loss of equilibrium  
F= Several fish exhibited a complete loss of equilibrium  
G= All fish were at the surface of the test solution

**RESULTS: CONTROL**

- Number/percentage of animals showing adverse effects: None

**RESULTS: TEST WITH REFERENCE SUBSTANCE**

- Concentrations:

- Results:

**Test condition : TEST ORGANISMS**

- Strain: Rainbow trout

- Supplier: Commercial supplier in Montana

- Wild caught: Information not provided

- Age/size/wet weight/loading: Same year class/40-60 millimeters/0.54-2.01 grams/0.12 g of biomass per liter of flowing test solution per day.

- Feeding: Dry commercial pelleted food, ad libitum, daily except during the 48 hours prior to testing.

- Pretreatment: None

**STOCK AND TEST SOLUTION AND THEIR PREPARATION**

- Dispersion: A diluter stock solution of 11.19 mg A.I./mL was prepared by diluting 11.25 g of 3,4-DCBTF (11.19 grams of active ingredient) with acetone to a total volume of 1000 mL. A Harvard Apparatus peristaltic pump was used to deliver the 11.19 mg A.I./mL stock solution of 3,4-DCBTF to the diluter system where it was diluted (65% dilution factor) to provide the desired exposure concentration range.

- Vehicle, solvent: acetone

- Concentration of vehicle/ solvent: 447 uL/L

**STABILITY OF THE TEST CHEMICAL SOLUTIONS:** Information not provided

**DILUTION WATER**

- Source: Well water

- Alkalinity: Range 23-25 mg/L

- Hardness: Range 27-28 mg/L CaCO<sub>3</sub>

- pH: Range 7.0-7.1

- Conductance: Range 100-110 umhos/cm

- Holding water: Same source as the dilution water

**TEST SYSTEM**

- Test type: Flow through

- Concentrations: dilution water control and a solvent (acetone) water controlDilution water control, solvent control; and nominal- 0.89, 1.4, 2.1, 3.2, and 5.0 mg active ingredient/L 3, 4 DCBTF; measured-0.34, 0.52, 0.83, 1.4, and 3.4 mg A.I./L 3,4-DCBTF.

- Dosing rate: 500 mL of solution per each diluter cycle to each replicate test aquarium.
- Renewal of test solution: The diluter provided approximately 6.4 solution volume replacements per aquarium every 24 hours.
- Exposure vessel type: Glass aquarium; Temperature-controlled water bath
- Number of replicates, fish per replicate: Duplicate test aquaria, Ten fish
- Test temperature: 12 +/- C
- Dissolved oxygen: Measured once daily in each replicate of each treatment level and the control throughout the study.
- pH: Measured once daily in each replicate of each treatment level and the control throughout the study.
- Adjustment of pH: Information not provided
- Intensity of irradiation:
- Photoperiod: 16 hours light and 8 hours darkness with a light intensity of 36-75 footcandles at the test solution surface.

DURATION OF THE TEST: 96 hours

TEST PARAMETER: Biological observations were made and recorded at test initiation and every 24 hours thereafter. Effects during this study were based on death defined as the lack of movement by the exposed. Mortalities were recorded and removed from each aquarium every 24 hours during exposure.

MONITORING OF TEST SUBSTANCE CONCENTRATION: Prior to the start of the definitive study, control, high, middle and low test concentrations were sampled and analyzed to judge whether sufficient quantities of test material were being delivered and maintained in the exposure aquaria.

During the study, water samples were taken from both replicate test solutions of each treatment level and the controls on test days 0 and 4 for analysis of 3,4-DCBTF.

In addition, quality assurance (QA) blind samples were prepared at each sampling interval in dilution water and remained with the set of exposure solution samples through the analytical process. Results of these QA samples were used to judge the precision and quality control maintained during the analysis of exposure solution samples.

**Test substance** : As stated by the report, the stability, characterization and verification of the test substance identity is the responsibility of the test sponsor, Occidental Chemical Corporation

**Conclusion** : Under the conditions of this study, 3,4-DCBTF is classified as moderately toxic to rainbow trout. The No Observed Effect Concentration through 96 hours was 0.52 mg A.I./L.

22.08.2005

(9)

**Type** : flow through

**Species** : Salmo gairdneri (Fish, estuary, fresh water)

**Exposure period** :

**Unit** :

**Method** :

**Year** :

**GLP** : no data  
**Test substance** : other TS:99.5% pure; clear, colorless liquid  
  
**Remark** : This preliminary test was conducted to select the nominal concentrations for the definitive test.  
**Result** : After 48 hours 100% mortality was observed at treatment levels greater or equal to 3.6 mg/liter of 3,4-DCBTF. During the same period, no mortality was recorder in the treatment level of 1.3 mg/liter 3,4-DCBTF.  
**Test condition** : Rainbow trout were exposed to measured concentrations of 3,4-DCBTF from 8.4 to 1.3 mg/L.  
29.07.2005 (10)

**Type** : static  
**Species** : Lepomis macrochirus (Fish, fresh water)  
**Exposure period** : 96 hour(s)  
**Unit** : mg/l  
**NOEC** : < 3.2 measured/nominal  
**LC50** : > 12.8 measured/nominal  
**Limit test** :  
**Analytical monitoring** : yes  
**Method** : other: EPA-660/3-75-009  
**Year** : 1975  
**GLP** : no data  
**Test substance** : other TS:clear, acetone-soluble liquid  
  
**Remark** : A range finding test was initially conducted. Nominal test material concentrations tested - 1.0, 5.0, 10.0, 50.0, and 100.0 mg/l; Control - 100% dilution water and a solution of acetone in dilution water served as solvent control.  
  
Mortalities were observed (4) in the 100 and 50 mg/l concentrations at 24, 48, 72 and 96 hours. The remaining concentrations, 1, 5, and 10 mg/l did not have mortalities.  
**Result** : At the 72 hours exposure period there was 1 mortality in the solvent control. Based on observations of the remaining fish it is concluded that this is a random mortality, and that the use of acetone as a solvent had no toxic effect on the fish.  
**Test condition** : Nominal test material concentrations tested - 3.2, 5.6, 10.0, 18.0, and 32.0 mg/l; Control - 100% dilution water and a solution of acetone in dilution water at the same acetone concentration as in the highest test concentration, served as solvent control.  
**Conclusion** : Under the conditions of this study, the 96 hour LC50 with 95% confidence limits for 3,4 DCBTF to bluegill sunfish is 12.8 (9.9 - 16.5) mg/l. the 96 hour no effect concentration was observed to be <3.2 mg/l.  
16.08.2005 (11)

**Type** : static  
**Species** : Salmo gairdneri (Fish, estuary, fresh water)  
**Exposure period** : 89 day(s)  
**Unit** : g/l  
**NOEC** : = .13 measured/nominal  
**LOEC** : ca. .25 measured/nominal  
**MATC** : = .18 calculated

**Limit test** :  
**Analytical monitoring** : yes  
**Method** : EPA OTS 797.1000  
**Year** :  
**GLP** : yes  
**Test substance** : other TS: 99.5% active ingredient (A.I.) as 3,4-DCBTF

**Remark** : A letter from Occidental Chemical Corporation to the EPA Test Rules Development Branch (TS-792) dated March 20, 1989 provided a response to a letter dated February 22, 1989 requesting more information on the study entitled: "The Toxicity of 3,4-Dichlorobenzotrifluoride to Rainbow Trout (*Salmo gairdneri*)". The information is enclosed as a part of the data package. It consisted of raw data requested.

Determination of Embryo Viability Rainbow Trout Early Life Stage Test.

It reads as follows:

"A definitive determination of embryo viability was made when all eggs exhibited pronounced embryonic development. Because of their extreme sensitivity to physical trauma during the early development stage, dead eggs are not generally removed from day 2 to 16. Upon removal, dead eggs, characterized by an opaque, white color, are preserved in Stockard's solution (an 85 : 6 : 5 : 4 mixture of water, glycerine, formalin, and glacial acetic acid), which also serves to clear the eggs, enabling a determination of embryonic development. Any egg exhibiting embryonic development (up to and including today), whether dead or alive, is considered fertile for purposes of determining percent viability. All non-viable eggs are discarded. Percent viability is based on the number of fertile embryos produced from the initial number of embryos exposed. If there are unaccounted for eggs, the actual number of eggs is used as the denominator in the computation of percent viability. Once viability was determined, 10 eggs were impartially selected from each incubation cup (20 per replicate aquarium) and placed in a separate incubation cup and suspended in each respective aquarium. This procedure assured unbiased thinning of embryos in preparation for the post-hatch segment of the study."

Test Termination

"All surviving fish that remained in an aquarium were netted and sacrificed in a solution containing tricaine methanesulfonate. The fish were then blotted dry on a paper towel and neatly lined up on a clipboard covered with aluminum foil. The total number of fish present were counted and recorded as the definitive number of fish surviving the post hatch exposure. Each fish was sequentially measured with a millimeter (mm) ruler to the nearest mm and recorded. Immediately after measuring, the fish were handed to a second individual to be weighed. the fish were weighed in the same order that they were measured on an analytical balance to the nearest 0.1 mg and recorded. Any abnormalities or physical deformities were noted. After weighing the fish were discarded.

The elapsed time between measuring and weighing the fish from each respective aquarium was less than five minutes."

This study was conducted as specified in the consent order signed on June 10, 1987. This fulfilled all the testing obligations stated in the consent order.

**Result**

- : RESULTS: EXPOSED
- Nominal/measured concentrations:
  - Effect data (Survival): Mean embryo viability in all concentrations of 3,4-DCBTF tested ranged from 94 to 97% and was comparable to the viability of control organisms. Similarly, mean survival of organisms at the completion of hatch (test day 29) ranged from 98-99% was statistically comparable to the survival of the pooled control organisms (99%).
- At test termination (60 days post hatch), mean larval survival in all test concentrations of 3,4-DCBTF ranged from 85-100%, which was not significantly reduced when compared to the control larvae.
- Concentration / response curve: No concentration-dependent effects on hatchability were observed in the concentration range established.
  - Other effects: The mean total length of larvae was adversely affected among organisms exposed to the two highest test concentrations, 0.51 and 0.25 mg 3,4-DCBTF A.I. /L.
- The only reduction of weight was among rainbow trout exposed to the highest concentration of 3,4-DCBTF tested, 0.51 mg A.I. /L.

**Test condition**

- : TEST ORGANISMS
- Strain: Rainbow trout
  - Supplier: Unfertilized eggs and sperm from Mount Lassen Trout Farm, California
  - Feeding during test: Larvae were fed live brine shrimp three times daily on weekdays and twice daily on weekends and holidays.
- Beginning on day 31, post-hatch larvae were fed supplemental portions of frozen brine shrimp.
- Pretreatment: Egg fertilization and handling procedures were conducted according to methods described by Phil Mackey, Mt. Lassen Trout Farm Red Bluff, California.
- STOCK AND TEST SOLUTION AND THEIR PREPARATION
- Vehicle, solvent: acetone
  - Concentration of vehicle/ solvent: Diluter stock solutions were prepared every 7 days by dissolving the appropriate amount of 3,4-DCBTF, e.g., 225 grams in acetone, to a total volume of 50 mL. The resulting stock solution contained 44.8 mg A.I./mL of 3,4-DBCTF.
- DILUTION WATER
- Source: Well water supplemented with Town of Wareham untreated well water and aerated
  - Aeration: Yes
  - Alkalinity: 19 - 24 mg/L
  - Hardness: 22 - 32 mg/L
  - TOC: Historical values averaged 3.7 ppm
  - pH: 6.9 - 7.4
  - Conductance: 100 - 130 umhos/cm
- TEST SYSTEM
- Test type: 60-day post-hatch continuous aqueous exposure
  - Concentrations: 0.51, 0.25, 0.13, 0.068, and 0.034 mg A.I./L 3,4-

DCBTF

- Renewal of test solution: Approximately 6.3 aquarium volume replacements per 24-hour, with a 90% replacement time of approximately 8-9 hours.
- Exposure vessel type: Aquaria
- Number of replicates, fish per replicate: 20 larvae per replicate aquaria
- Test temperature: 12 plus/minus 2 C
- Photoperiod: Sixteen hours of light 20 - 100 footcandles at the water surface

DURATION OF THE TEST: 89 days (60 days post-hatch)

TEST PARAMETER: Embryo viability, survival of organisms at hatch and survival and growth (wet weight and total length) of larvae after 60 days post-hatch exposure.

MONITORING OF TEST SUBSTANCE CONCENTRATION:

Samples were removed from all replicate test solutions and the controls on test days 0, 7 and 14 and weekly thereafter. Three quality assurance blind samples were prepared at each sampling interval.

- Test substance** : The sponsor, Occidental Chemical Corporation, maintained all test material information.
- Conclusion** : Under the conditions of this study, based on the significant adverse effect on larval length measured at test termination, the Maximum Acceptable Toxicant Concentration (MATC) of 3,4-DCBTF for rainbow trout was established to be > 0.13 and < 0.25 mg A.I./L (geometric mean MATC = 0.18 mg A.I./L).

24.08.2005

(12)

**4.2 ACUTE TOXICITY TO AQUATIC INVERTEBRATES**

- Type** : static
- Species** : Daphnia magna (Crustacea)
- Exposure period** : 48 hour(s)
- Unit** : mg/l
- NOEC** : 3.2 measured/nominal
- EC50** : = 10.2 measured/nominal
- Analytical monitoring** : no data
- Method** : other: EPA-660/3-75-009
- Year** : 1975
- GLP** : no data
- Test substance** : other TS:colorless, transparent liquid, soluble in acetone
- Remark** : A range-finding test for mortality was first conducted with four concentrations(1.8, 3.2, 5.6, 10.0 and 18.8 mg/l), a control and solvent control tested in duplicate.
- Result** : RESULTS:
  - Nominal concentrations: 1.8, 3.2, 5.6, 10.0, and 18.0 mg/l
  - Other effects: The 48 hour LC50 with 95% confidence limits for DCBTF to Daphnia magna is 10.2 (8.1-12.7) mg/l. The 48 hour no effect level was observed to be 3.2 mg/l.

Table 1: Percent Mortality at 24 and 48 hours with different test substance concentrations

Control: 0 / 0  
Solvent Control: 0 / 0  
1.8 mg/l: 0 / 0  
3.2 mg/l: 0 / 0  
5.6 mg/l: 30 / 35  
10.0 mg/l: 60 / 60  
18.8 mg/l: 55 / 55

Table 2: Dissolved Oxygen at Initial and 48 hours with different test substance concentrations

Control: 9.0 / 8.9  
Solvent Control: 8.7 / 8.7  
1.8 mg/l: 8.7 / 8.5  
3.2 mg/l: 8.7 / 8.7  
5.6 mg/l: 8.6 / 8.6  
10.0 mg/l: 8.6 / 8.5  
18.8 mg/l: 8.5 / 8.5

Table 3: pH at Initial and 48 hours with different test substance concentrations

Control: 8.39 / 8.43  
Solvent Control: 8.46 / 8.46  
1.8 mg/l: 8.47 / 8.45  
3.2 mg/l: 8.47 / 8.44  
5.6 mg/l: 8.48 / 8.45  
10.0 mg/l: 8.48 / 8.43  
18.8 mg/l: 8.48 / 8.44

**Test condition**

- : TEST ORGANISMS
- Strain: Daphnia magna Straus
  - Source/supplier: Union Carbide Environmental Services, Tarrytown, New York; Laboratory stock culture; original population obtained from the EPA Environmental Research Laboratory, Duluth, Minnesota USA.
  - Age: less than 20 hours old
  - Feeding: One hour before the test they were fed
  - Feeding during test: No food was administered
- STOCK AND TEST SOLUTION AND THEIR PREPARATION
- Dispersion: A primary stock solution of 100 mg/ml was prepared by weight to a precision of 0.1 mg, and varying amount added to 500 ml of dilution water, yielding the desired test concentrations.
  - Vehicle, solvent: acetone
  - Concentration of vehicle/ solvent: The solution of acetone in dilution water at the same acetone concentration as in the highest test concentration, served as solvent control.
- DILUTION WATER
- Source: A well on the Tarrytown site
  - Aeration: Yes
  - Alkalinity: 124 mg/l as CaCo3
  - Hardness: 202 mg/l as CaCO3
  - pH: 8.39
  - Conductance: 650 umhos/cm
- TEST SYSTEM
- Test type: Static

- Concentrations: Nominal test material concentrations tested - 1.8, 3.2, 5.6, 10.0, and 18.0 mg active ingredient/liter; Control - 100% dilution water and a solution of acetone in dilution water at the same acetone concentration as in the highest test concentration, served as solvent control.

- Exposure vessel type: Beaker

- Number of replicates, individuals per replicate: Four, five organisms

- Test temperature: 20 plus/minus 2 C

- Dissolved oxygen: Nominal concentration range 8.5-8.7; solvent control 8.7; control average 8.95

- pH: Nominal concentration range 8.43-8.48; solvent control average 8.455; control average 8.41

DURATION OF THE TEST: 48 hour

**Conclusion** : Under the conditions of this study, the 48 hour LC50 of DCBTF to *Daphnia magna* is 10.2 mg/l. This value is based on nominal concentrations of the test material in hard water.

**Flag** : Critical study for SIDS endpoint (13)

22.08.2005

**Type** : flow through

**Species** : *Gammarus fasciatus* (Crustacea)

**Exposure period** : 96 hour(s)

**Unit** : mg/l

**NOEC** : = 1.3 measured/nominal

**Analytical monitoring** : yes

**Method** : other:U.S. EPA 1985. Standard Evaluation Procedures for Acute Toxicity TEst for Estuarine and Marine Organisms. Hazard Evaluation Division, Office of Pesticide Programs. Draft June 17, 1985.

**Year** : 1985

**GLP** : yes

**Test substance** : other TS: purity 99.5%

**Remark** : During a preliminary flow-through exposure, gammarids were exposed to nominal, 3,4-DCBTF concentration of 0.89, 2.1 and 5.0 mg active ingredient/liter. After 96 hours 100% mortality was observed at the 5.0 mg/liter level. During the same period, no mortalities were recorded in the remaining levels. Based on these results, nominal concentrations were selected for the definitive study.

**Result** : Following 96 hours of exposure, 70 and 100% mortality was observed in the two highest mean observed concentration tested (1.9 and 2.8 active ingredient/liter respectively).

The percent mortality in the remaining treatment levels ranged from 5 to 0%.

LC50 values (mg active ingredient/liter): 24-hour 2.3; 48-hour 2.0; 72-hour 1.9; 96-hour 1.7

**Test condition** : Nominal test material concentrations tested - 0.89, 1.4, 2.1, 3.3, and 5.0 mg active ingredient/liter; Control - 100% dilution water and a solution of acetone in dilution water at the same acetone concentration as in the highest test concentration, served as solvent control.

Based on analyses, test days 0 and 4, the mean measured test concentrations were 0.52, 0.83, 1.3, 1.9, and 2.8 mg active ingredient/liter. The exposures achieved were sufficient to produce a concentration-related biological response (death).

Biological observations were made and recorded at test initiation and every 24 hours thereafter until study termination.

- Test substance** : Stability, characterization and verification of 2,4-DCBTF identity was the responsibility of the test sponsor, Occidental Chemical Corporation.
- Conclusion** : Under the conditions of this study, 3,4-DCBTF is classified as moderately toxic to gammarids (*Gammarus fasciatus*).

16.08.2005

(14)

#### 4.3 TOXICITY TO AQUATIC PLANTS E.G. ALGAE

- Species** : *Selenastrum capricornutum* (Algae)
- Endpoint** : growth rate
- Exposure period** : 96 hour(s)
- Unit** : mg/l
- Limit test** :
- Analytical monitoring** : yes
- Method** : EPA OTS 797.1050
- Year** : 1987
- GLP** : yes
- Test substance** : other TS: Clear, colorless liquid; 99.5% active ingredient.

**Result** : RESULTS: EXPOSED

- Nominal concentrations:

Nominal Concn	0-Hour	96-Hour	Mean
Control	<0.074	<0.0019	BDL
Solv. Control	<0.074	<0.0019	BDL
3.1	0.79	<0.0019	0.40
6.3	1.2	0.0028	0.62
13A*	3.5	0.0092	1.8**
13B*	3.5	0.0092	1.8**
25	7.3	0.017	3.7
50	17	0.080	8.6

\*=Two samples analyzed to determine analytical reproducibility

BDL= below detectable limit

\*\*= Based on mean of four replicates

- Cell density data:

M. Concn (mg/L)	REPLICATE			Mean	S.D.
	A	B	C		
Control	54	52	73	59*	11
S. Con	54	67	60	61*	5
0.40	71	84	73	76*	7
0.62	83	68	85*	79	9
1.8	78	89	102	89	12
3.7	66	66	74	68	5
8.6	74	59	76	69	9

\*=Few clumps of cells observed; able to count individual cells.

#### RESULTS: TEST WITH REFERENCE SUBSTANCE

- Concentrations: The average analytical recovery for the concentration levels was 84.8% (plus/minus 6.33). Measured concentrations at test initiation were approximately one-quarter of the nominal concentrations, but still exceeded water solubility (11 mg/L) at the highest test concentration. Measured concentration at test termination were <1% of initial measured concentrations, reflecting the highly volatile nature of 3,4-DCBTF. The loss of test material occurred despite the fact that the test vessels remained sealed throughout the test.

No insoluble material (such as precipitate or a film on the solution surface) was observed throughout the test in any treatment level.

- Results: Algae growth was not inhibited in any of the test concentrations compared to the controls.

STATISTICAL RESULTS: Statistical analysis of data and preparation of a subculture was not required at test termination.

#### Test condition

#### : TEST ORGANISMS

- Strain: *Selenastrum capricornutum*
- Source/supplier: Carolina Biological Supply Company  
Burlington, North Carolina USA
- Laboratory culture: Marine Biological Laboratory medium
- Initial cell concentration: 1 x 10000 cells/ml

#### STOCK AND TEST SOLUTION AND THEIR PREPARATION

- Vehicle, solvent: MBL medium, acetone
- Concentration of vehicle/ solvent: 50 mg/L stock solution
- Other procedures: Stock solution of 500,000 mg/L was prepared by adding 5.0018 g of 3,4-DCBTF to a sterile 10-ml volumetric flask and diluting to volume with acetone. 100 microliters was then added to a sterile 1-L volumetric flask and diluted to volume with MBL medium to prepare a 50 mg/L stock solution. Test solutions were prepared by adding appropriate volumes of stock solution to sterile 500-mL volumetric flasks and diluting to volume with MBL medium. A solvent control flask was prepared. This flask contained 50 uL of acetone (the greatest amount of solvent used in preparing the test solutions). A control flask was also prepared containing MBL medium only.

#### REFERENCE SUBSTANCE: Acetone

#### GROWTH/TEST MEDIUM CHEMISTRY

- EDTA: EDTA is included in media for algal stock cultures, but it is not included in media used in toxicity tests
- pH: 7.5 plus/minus 0.1 with 0.1N hydrochloric acid

#### TEST SYSTEM

- Test type: Phytotoxicity
- Concentrations: 3.1, 6.3, 13, 25, and 50 mg/L
- Renewal of test solution: Algae were transferred into fresh medium three days prior to testing
- Exposure vessel type: Volumetric flasks
- Number of replicates: Three per treatment level and the controls

- Measured concentrations: 0.40, 0.62, 1.8, 3.7, and 8.6 mg/L (based on mean of 0- and 96-hour analyses)
- Test temperature: 24 plus/minus 2 C
- pH: 7.2 - 7.6

TEST PARAMETER: 96-hour duration, 23-25 degree C, constant illumination (5,000 lux), shaking at 100 rpm  
 MONITORING OF TEST SUBSTANCE CONCENTRATION: Due to the volatility of DCBTF only initial and final concentrations were measured.

**Test substance** : Stability, characterization and verification of test substance identity was the responsibility of the Sponsor, Occidental Chemical Corporation.

**Conclusion** : Under the conditions of this study, cell density was not reduced in any test concentration relative to the control.

**Flag** : Critical study for SIDS endpoint

22.08.2005 (15)

#### 4.4 TOXICITY TO MICROORGANISMS E.G. BACTERIA

##### 4.5.1 CHRONIC TOXICITY TO FISH

##### 4.5.2 CHRONIC TOXICITY TO AQUATIC INVERTEBRATES

**Species** : Daphnia magna (Crustacea)

**Endpoint** : other:LC50; RI50; reproduction effects; mortality; MATC; mean brood size

**Exposure period** : 21 day(s)

**Unit** : mg/l

**EC50** : ca. .17 - .42 calculated

**Analytical monitoring** : yes

**Method** : other:EPA-660/3-75-009

**Year** : 1975

**GLP** : no data

**Test substance** : other TS: sponsor lab maintained test material documentation

**Result** :

- Nominal/measured concentrations:
- Concentration / response curve:  
 The concentration of test material lethal to 50 percent of the test population (LC50) with 95% confidence limits, calculated for days 4, 8, 15, and 21 respectively, are 0.33 (0.27-0.42), 0.26 (0.21-0.33), 0.23 (0.17-0.31) and 0.16 (0.12-0.21) mg/liter.
- Mortality:  
 Cumulative adult mortality for the 21-day exposure in the lowest treatment was stastically equivalent to that in the control. Mortality in all other dose groups was significantly higher.
- Effect data:

The test concentrations reducing cumulative reproduction by 50 percent (Median Reproductive Impairment RI50), with 95% confidence limits, calculated for day 15, is 0.12 (0.07 - 0.19) mg/l. The estimated 21-day RI50 is 0.12 mg/liter.

The mean brood sizes in the control and three lowest treatment groups were approximately the same throughout the test.

The 21-day Maximum Acceptable Toxicant Concentration (MATC) based on productivity and further defined by the RI50, is greater than or equal to 0.06 less than 0.12 mg/liter.

#### STATISTICAL RESULTS:

One-way analysis of variance (ANOVA) of cumulative daily mean young production, for the 21-day exposure, indicates that the three lowest concentrations tested (0.03, 0.06 and 0.12 mg/l) were stastically equivalent to control. The second highest treatment (0.24 mg/l) produced significantly fewer young throughout, and the highest treatment (0.38 mg/l) never produced young.

#### Test condition

##### : TEST ORGANISMS

- Strain: Daphnia magna
- Supplier: Union Carbide Environmental Services stock cultures originally supplied by the EPA Environmental Research Laboratory, Duluth, Minnesota.
- Age: less than 20 hours old
- Feeding: Newly released instars were fed one hour before inoculation
- Feeding during test: The feeding was as follows: 1 ml prepared suspension twice daily, 1.5 ml once daily on weekends; 10 g trout mash, 3 g Cerophyl, in 500 ml well water

##### STOCK AND TEST SOLUTION AND THEIR PREPARATION

- Toxicant stock solution concentration: 14.29 mg/ml
- Other procedures: A solvent control was not included since the highest acetone concentration, 0.49 ml/l, was below the maximum established by the Committee on Methods for Toxicity Tests with Aquatic Organisms (EPA-660/3-75-009).

##### DILUTION WATER

- Source: Union Carbide Environmental Services, 15-meter well on the Tarrytown, New York site.
- Aeration: Yes, at a central unit at the laboratory.
- Alkalinity: 143 mg/l as CaCO<sub>3</sub>
- Hardness: 220 mg/l as CaCO<sub>3</sub>
- Acidity: 7 mg/l as CaCO<sub>3</sub>
- Approximate Temperature: 22 C
- pH: 7.71-8.01
- Dissolved oxygen content: 8.0 mg/l
- Conductance: 575 umhos/cm
- Holding water: Well water

##### TEST SYSTEM

- Test type: Daphnia magna flow-through chronic
- Mean measured concentrations: 0.38, 0.24, 0.12, 0.06, and 0.03 mg/l, plus control

- Dosing rate: Mean rate of 4.1 ml/hour
- Renewal of test solution: Approximately every third day
- Exposure vessel type: glass battery jars 15.5 cm high x 12.5 cm dia, holding 1.7 liters with a U-shaped notch in the lip, covered with No. 405 Nitex screen, to maintain constant water level without losing test animals.
- Number of replicates, individuals per replicates: Four replicate vessels; fifteen of these instars, selected at random then distributed to each test vessel, a total of 60 daphnids for each concentration of test material.
- Test temperature: 20 +/- 3 C
- Dissolved oxygen, pH, hardness, alkalinity, conductivity and acidity: Measured for all concentrations at day 0, 7, 14, and 21.
- Photoperiod: 16 hours light; 8 hours dark. Illumination was 2 meters above the surface of the test vessels, delivering 800 plus/minus lumens/m2.

DURATION OF THE TEST: 21 days

ENDPOINTS ASSESSED: Determination of the following: LC50; test concentration needed to reduce cumulative reproduction by 50% for 15 and 21 days; significant effects on young production and adult mortality due to treatment; maximum acceptable toxicant concentration; mean brood size per adult daphnid, related to mean concentration tested; mortality and productivity counts

SAMPLING: Surviving Daphnia magna and their progeny were counted on days 1, 2, 3, 4, 6, 8, 10, 13, 15, 17, and 21.

MONITORING OF TEST SUBSTANCE CONCENTRATION: Samples for 3,4-DCBTF analysis, from the control and each treatment, were collected on days 0, 3, 6, 9, 13, 16, and 21. They were collected directly from alternate replicates, taking care not to entrap test animals.

Each test treatment and control was analyzed for alkalinity, acidity, conductivity, hardness, dissolved oxygen and pH on test days 0, 7, 14 and 21. The methods used were induction coupled plasma emission spectrometry; standard analytical procedures; pH meter; YSI Conductivity Bridge; and YSI Oxygen Meter.

**Conclusion** : Under the conditions of this study, the 21-day Maximum Acceptable Toxicant Concentration (MATC), based on productivity and further defined by Reproductive Impairment (RI50) is >or equal to 0.06<0.12 mg/l.

The 21-day Maximum Acceptable Toxicant Concentration (MATC) based on productivity and further defined by the RI50, is greater than or equal to 0.06 less than 0.12 mg/liter.

**Flag** : Critical study for SIDS endpoint

22.08.2005

(16)

#### 4.6.1 TOXICITY TO SEDIMENT DWELLING ORGANISMS

#### 4.6.2 TOXICITY TO TERRESTRIAL PLANTS

#### 4.6.3 TOXICITY TO SOIL DWELLING ORGANISMS

#### 4.6.4 TOX. TO OTHER NON MAMM. TERR. SPECIES

#### 4.7 BIOLOGICAL EFFECTS MONITORING

#### 4.8 BIOTRANSFORMATION AND KINETICS

#### 4.9 ADDITIONAL REMARKS

<b>Memo</b>	: Additional reports	
<b>Remark</b>	: This document is an Environmental Impact Statement pertaining to the stocking of Pacific salmon (coho and chinook) in Lake Ontario and its tributaries upstream to the first impassable barrier. A description of the program is presented including objectives, authority and public need, location and schedule, history and background, and its relationship to other plans and programs. The section on environmental setting describes the Lake Ontario environment at present and prior to the start of the Pacific salmon program in 1968.	
16.08.2005		(17)
<b>Conclusion</b>	: Based on this 31 day study, the maximum acceptable toxicant concentration (MATC) of PCBTF for fathead minnow embryos and larvae was estimated to be >0.54<1.4 mg/l.	
16.08.2005		(18)
06.07.2005		(19)

## 5.0 TOXICOKINETICS, METABOLISM AND DISTRIBUTION

### 5.1.1 ACUTE ORAL TOXICITY

**Type** : LD50  
**Value** : = 1150 mg/kg bw  
**Species** : rat  
**Strain** : other: CF Nelson  
**Sex** : male  
**Number of animals** : 40  
**Vehicle** :  
**Doses** : 1870, 940, 470 or 240 mg/kg  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:purity not provided

**Result** : MORTALITY:

Table 1

Dose (mg/kg)	
1870	9/10
940	3/10
470	0/10
240	0/10

**CLINICAL SIGNS:**

Increased salivation, chromorhinitis, tremors, lethargy, body rigidity, diarrhea

Table 2

Dose (mg/kg)	Onset of (S)	Signs, (D)	Death, Hours and Days
	0-5	6-24	2 3 4 5 6 7 8-14
1870	S	D3	D1 D3 D2
940	S	D2	D1
470			
240			

**GROSS PATHOLOGY:**

Decedents - lungs hemorrhagic; livers darkened.  
Survivors - Normal

**POTENTIAL TARGET ORGANS:** None identified.

**SEX-SPECIFIC DIFFERENCES:** Only a single sex tested.

**Test condition** : **TEST ORGANISMS:**  
- Source: Data not provided  
- Age: Data not provided

- Mean weight at study initiation: 208-260 g
- Group size: 10 animals/dose level
- Controls: None

ADMINISTRATION:

- Doses: 1870, 940, 470 and 240 mg/kg
- Doses per time period: Single-dose oral gavage (Fasted animals)
- Volume administered or concentration: Data not provided
- Post dose observation period: 14 days

**Conclusion** : EXAMINATIONS: Clinical observations, gross pathological  
 : Under the conditions of this test, 3,4-Dichlorobenzotrifluoride's  
 LD50 is 1150 (870-1550) mg/kg. It is considered slightly toxic by  
 ingestion of a single dose.  
**Flag** : non confidential  
 22.08.2005 (20)

**Type** : LD50  
**Value** :  
**Species** : rat  
**Strain** : Sprague-Dawley  
**Sex** : male/female  
**Number of animals** : 7  
**Vehicle** : other: undiluted  
**Doses** : 7/sex; 1.281 - 8.137 ml/kg  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : no data

**Method** : Preparation and Administration of Test Material: All randomly assigned animals received the same concentration per group and approximately the same volume of dosing solution. The test material was administered undiluted. The study consisted of 7 geometrically spaced dose levels in addition to 4 range finding levels.

Food and water were available ad libitum throughout the study period except for an overnight period preceding compound administration, the individual dose calculated and administered by gavage. Body weights of all surviving animals were again taken at 7 and 14 days following administration of the test material.

Animals which died on study or were sacrificed at 14 days were subjected to a gross necropsy examination and abnormalities recorded.

**Result** : Randomly assigned rats were used for each dose group. Test animals were individually housed and identified by animal number and ear punch.  
 : MORTALITY:

- Number of deaths at each dose:

Male - 1.28 ml/kg: 0/7; 1.658 ml/kg: 2/7; 2.034 ml/kg: 5/7; 2.630

ml/kg: 5/7; 3.229 ml/kg: 7/7; 5.126 ml/kg: 7/7; 8.137 ml/kg: 7/7

Female - 1.281 ml/kg: 0/7; 1.658 ml/kg: 2/7; 2.034 ml/kg: 4/7;  
2.630 ml/kg: 7/7; 3.229 ml/kg: 7/7; 5.126 ml/kg: 7/7; 8.137 ml/kg:  
7/7

**Test condition** : TEST ORGANISMS:  
- Source: Sprague-Dawley Rats  
- Age: approximately 7 weeks  
- Mean Weight at study initiation: Males:217-241g; Females:201-211g  
- Group size: 7/sex  
- Controls: None  
ADMINISTRATION:  
- Doses: 1.281-8.137 ml/kg  
- Doses per time period: Single-dose oral gavage  
- Post dose observation period: 14 days  
EXAMINATIONS: Pharmacotoxic signs, mortality, gross pathology

**Conclusion** : Under the conditions of this study, the estimated LD50 for males is 2.225 ml/kg body weight; for females 1.960 ml/kg body weight.

**Flag** : non confidential  
22.08.2005 (21)

**Type** : LD50  
**Value** : ca. 2 ml/kg bw  
**Species** : rat  
**Strain** : no data  
**Sex** : no data  
**Number of animals** : 4  
**Vehicle** : other:none  
**Doses** : no data  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:data not stated

**Result** : The LD50 for rat via the oral route is approximately 2 ml/kg.  
**Test condition** : TEST ORGANISM:  
Source: No data - Four animals were dosed.

Age and sex: no data

Mean Weight at Study Initiation: no data

Controls: None

ADMINISTRATION:  
Doses per time period: Single-dose oral gavage

Maximum volume administered: no data

Post-Dose Observation Period: 15 days

**Reliability** : Examinations: no data  
(4) not assignable  
Not assignable: The strain and sex of the rat is not indicated. In addition, test material information is not provided.

### 5.1.2 ACUTE INHALATION TOXICITY

<b>Type</b>	:	LC50
<b>Value</b>	:	
<b>Species</b>	:	rat
<b>Strain</b>	:	Sprague-Dawley
<b>Sex</b>	:	male/female
<b>Number of animals</b>	:	20
<b>Vehicle</b>	:	
<b>Doses</b>	:	8.59 mg/l, 15.86 mg/l
<b>Exposure time</b>	:	4 hour(s)
<b>Method</b>	:	
<b>Year</b>	:	
<b>GLP</b>	:	no data
<b>Test substance</b>	:	other TS:data maintained at Hooker Industrial Chemicals; noted as a clear, colorless liquid.
<b>Method</b>	:	<p>Group I animals: The test material was placed in two 100-milliliter fritted bottom smog bubblers. Dry air, at a flow rate of two liters per minute, was passed through one of the bubblers and the resultant vapor-laden air entered a Y-tube where it was diluted with room air at a flow rate of two liters per minute, producing a total flow rate of four liters per minute. The vapor-laden air stream then entered the 26.5 liter glass exposure chamber housing the Group I test animals.</p> <p>Group II animals: Dry air, at a flow rate of four liters per minute passed through the other bubbler and this vapor-laden air stream directly, undiluted, another 26.5 liter glass exposure chamber housing Group II test animals.</p>
<b>Result</b>	:	<p><b>CLINICAL SIGNS:</b></p> <p>Group I - Within 15 minutes, reduced activity and closed eyes labored was observed. By 30 minutes labored breathing was noted. By the three hour observation, several animals exhibited excessive lacrimation. Upon removal from the chamber, mucoid nasal discharge (2/10), yellow staining of the ano-genital fur (2/10), moist rales (1/10) and red nasal discharge (1/10) were observed.</p> <p>All the signs listed above lasted for the duration of the exposure. All signs abated by the end of the four-hour post-exposure period except yellow staining of the ano-genital fur (2/10) and dry rales (1/10). Eight of ten animals exhibited dry rales persisting from between three to five days in four of these animals.</p> <p>Body weights: A slower than normal weight gain in all females and a higher than normal number of animals with lung discoloration (8/10), indicates a test material-related residual effect.</p> <p><b>CLINICAL SIGNS:</b> Group II - The higher dosed animals exhibited the same</p>

immediate test material-related effects as the lower dose and in addition, excessive salivation (10/10), mucoid nasal discharge (1/10), and localized tremors of the head and forepaws (1/10). Upon removal from the chamber, the signs observed were: excessive lacrimation (5/10), excessive lacrimation (5/10), mucoid nasal discharge (4/10), labored breathing (6/10), and yellow staining of the ano-genital fur (10/10). These signs that also appeared in Group I were more severe in Group II's observations.

One hour post-exposure observations were the same as above with the exception of excessive salivation decreased from seven to ten animals. By the end of the four hour post-exposure observation period excessive salivation abated and the following signs were still observed: excessive lacrimation (1/10), mucoid nasal discharge (3/10), labored breathing (9/10), yellow staining of the ano-genital fur (5/10), dry rales (8/10), brown staining of the ano-genital fur (1/10), red nasal discharge (1/10), soft stool (1/10), and moist rales (1/10). These signs were more severe than Group I.

During the 14-day in-life observation period dry rales (10/10), mucoid nasal discharge (6/10), red nasal discharge (2/10, one observation each), labored breathing (4 rats one observation each), and yellow staining of the ano-genital area (2 rats, one observation each) were recorded.

#### GROSS PATHOLOGY:

Necropsy observations revealed lung discoloration in all ten rats which is higher than that observed in Group I and higher than that which is considered normal for Sprague-Dawley rats in this type of exposure.

The higher than normal incidence of dry rales and lung discoloration, indicated a residual effect of the test material.

#### Test condition

: TEST ORGANISMS:

Source: Charles River Breeding Laboratories, Wilmington, Massachusetts

Age: males 7-9 weeks; female 9-11 weeks

Weight at study initiation: males: 246-286 g; females: 200-215 g

Number of animals: 5/sex/exposure concentration

Contols: None

#### ADMINISTRATION:

Type of Exposure: whole-body vapor exposures

Concentrations: (ml/l)

Group I - Nominal 8.59

Group II - Nominal 15.86

Exposures occurred in 26.5 liter glass exposure chambers.

The in-chamber temperature range (centigrade) was recorded during the four-hour exposure: Group I 24.5-26.5 and Group II 25.0 - 27.8.

The nominal concentration was calculated by dividing the weight lost by the total flow through the chamber during the exposure.

#### EXAMINATIONS:

All animals were observed prior to exposure and at 15-minute intervals during the first hour of exposure, hourly until termination of the exposure, upon removal from the chamber, hourly for four hours post-exposure, and daily thereafter for 14 days post-exposure.

Individual body weights were recorded for Group I on days 0, 2, 4, 7 and 14; Group II on days 0, 2, 4, 8, and 14.

On Day 14, all animals were sacrificed with ethyl ether and gross necropsy examinations were performed. No histopathology was conducted.

**Conclusion** : Under the conditions of this study, the two four-hour inhalation exposure of rats to vapors of DCBTF, at nominal exposure concentrations of 8.59 mg/l and 15.86 mg/l, did not produce mortality.

**Reliability Flag** : (1) valid without restriction  
: Critical study for SIDS endpoint

22.08.2005

(23)

### 5.1.3 ACUTE DERMAL TOXICITY

**Type** : LD50  
**Value** :  
**Species** : rat  
**Strain** :  
**Sex** :  
**Number of animals** : 4  
**Vehicle** : other: pure and as an emulsion in a 2:1:1 mixture of peanut oil:acetone:ethanol  
**Doses** : 5 ml/kg and 2.5 ml/kg  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : no data

**Test condition** : TEST ORGANISMS:  
- Source; Age; Weight at study initiation; Strain: Not provided  
- Group size: Four  
- Controls: None

ADMINISTRATION:  
- Area covered: Unknown  
- Occlusion: Unknown  
- Vehicle: Emulsion in a 2:1:1 mixture of peanut oil:acetone:ethanol or pure

- Concentration in vehicle: Unknown  
- Total volume applied: Unknown  
- Doses: 5 ml/kg and 2.5 ml/kg  
- Removal of test substance: Unknown

**Conclusion** : EXAMINATIONS: Information not provided  
: Under the conditions of this study, 3,4-DCBTF is non-toxic at a  
dose of 5 ml/kg (as well as at a dose of 2.5 ml/kg).

**Reliability** : (4) not assignable  
Basic study parameters were not provided.

16.08.2005 (24)

**Type** : LD50  
**Value** : ca. 5000 mg/kg bw  
**Species** : rabbit  
**Strain** : no data  
**Sex** : female  
**Number of animals** : 3  
**Vehicle** :  
**Doses** : single application  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:specific gravity 1.53

**Result** : MORBIDITY:  
- Number of deaths at each dose: 1 sacrificed following severe  
depression and loose stools; 11 or 12 days post-dosing

APPLICATION SITE: Data not provided

CLINICAL SIGNS: Reddened skin seen at 24 hours, became  
normal and pliable by 14-day necropsy

NECROPSY FINDINGS: Animal #1 and #3 - skins pliable and  
non-irritated. No gross internal changes observed.

Animal #2 - sacrificed on 12 days post-dosage. Skin pliable and  
non-irritated; feces loose. No gross internal changes observed.

POTENTIAL TARGET ORGANS: None

**Test condition** : SEX-SPECIFIC DIFFERENCES: Sex of rabbits not provided  
: TEST ORGANISMS:  
- Source: Data not provided  
- Age: Data not provided  
- Weight at study initiation: 1.89-2.16 kg  
- Group size: Three  
- Controls: None

ADMINISTRATION:  
- Area covered: Data not provided  
- Occlusion: Yes  
- Vehicle: None  
- Concentration in vehicle: Neat material  
- Total volume applied: 5000 mg/kg

- Doses: Single application
- Removal of test substance: Data not provided

**EXAMINATIONS:**

Clinical and gross observations, body weights  
 Post-Dose Observation Period: 14 days

**Conclusion** : Under the conditions of this study, the LD50 for 3-4, DCBTF is > 5000 mg/kg and is considered non-toxic. (25)  
 22.08.2005

**Type** : LD50  
**Value** : > 5000 mg/kg bw  
**Species** : rabbit  
**Strain** : no data  
**Sex** : male  
**Number of animals** : 5  
**Vehicle** :  
**Doses** : 5000 mg/kg  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:purity not defined

**Method** : The test material as received was applied at 5000 mg/kg body weight under an impervious cuff in continuous 24-hour exposure with the closely shaven skin. The animals were observed during and after exposure and weighed at intervals up to 14-days post-application. The animals were then submitted for necropsy examination at death or at scheduled study termination.

**Result** : MORTALITY:

Dose (mg/kg)	# Dead/# Treated	
	Male	
5000	1	5

Observations:

Dose (mg/kg)	Onset of (S) Signs, (D) Death, Hours and Days									
	0-5	6-24	2	3	4	5	6	7	8-14	
5000				S					D1	

Clinical observations

Diarrhea; skin irritation slight to well defined erythema, slight edema

Gross necropsy

Survivors normal

**Test condition** : TEST ORGANISM:

Source, Age, Strain: Source and age unknown; Albino rabbit

Mean weight at Study Initiation: 2.53 kg

Controls: None

ADMINISTRATION:

Area Covered: Unknown

Occlusion: Impervious cuff

Dose: 5000 mg/kg; single 24-hour dose

Vehicle: None, administered undiluted

Removal of Test Material: No data

Post-Dose Observation Period: 14 days

**Conclusion** : Examinations: Clinical and gross observations, body weights  
: Under the conditions of this study, the acute dermal LD50 is  
: >5000 mg/kg for 3,4-DCBTF.  
22.08.2005 (26)

#### 5.1.4 ACUTE TOXICITY, OTHER ROUTES

#### 5.2.1 SKIN IRRITATION

**Species** : rabbit  
**Concentration** : 5 other:g/kg  
**Exposure** : Occlusive  
**Exposure time** : hour(s)  
**Number of animals** : 6  
**Vehicle** :  
**PDII** : 2.75  
**Result** : moderately irritating  
**Classification** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:no data

**Method** : Six rabbits, 3/sex, each abraded and non-abraded, received a 0.5 ml single application under an occluded patch. Observations were performed at 24 and 72 hour.

**Result** : Summary of Scores for Skin Irritation

Average

24 HOURS

SKIN

non-abraded erythema 1.3 edema 1.7

abraded erythema 1.3 edema 2.0

72 HOURS

SKIN

non-abraded erythema 1.0 edema 1.7

abraded erythema 1.0 edema 2.0

Combined Averages: 11.0

**Test condition** : Primary Irritation Index 2.75  
: TEST ANIMALS:  
- Strain: Not provided  
- Sex: Male and female  
- Source: Not provided  
- Age: Not provided  
- Weight at study initiation: Not provided  
- Number of animals: 6; 3 per sex  
- Controls: None  
ADMINISTRATION/EXPOSURE  
- Preparation of test substance: Data not provided  
- Area of exposure: Data not provided  
- Occlusion: Yes  
- Vehicle: No; neat material  
- Concentration in vehicle: Neat material  
- Total volume applied: 0.5 ml single application  
- Postexposure period: No information provided  
- Removal of test substance: No information provided  
EXAMINATIONS  
- Scoring system: Not stated  
- Examination time points: 24 and 72 hour observation  
**Conclusion** : Under the conditions of this study, 3,4-Dichlorobenzotrifluoride is considered a moderate irritant.  
16.08.2005 (27)

**Species** : rabbit  
**Concentration** : undiluted  
**Exposure** : no data  
**Exposure time** : no data  
**Number of animals** : 4  
**Vehicle** :  
**PDII** :  
**Result** : slightly irritating  
**Classification** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:no data

**Test condition** : Test Animals: Rabbits  
- Strain, Sex, Age, Source and Weight at study initiation: Information not provided.  
- Number of animals: Four  
- Controls: None

ADMINISTRATION/EXPOSURE

- Preparation of Test Substance: undiluted
- Area of Exposure: unknown
- Occlusion: Unknown
- Vehicle: None; Neat material
- Total volume applied: Unknown
- Postexposure period: 72-hours
- Removal of test substance: Unknown

Examinations: Data not provided

**Conclusion** : Under the conditions of this study, 3,4-DCBTF is slightly irritating.  
**Reliability** : (4) not assignable  
Basic information regarding study design was not provided.  
16.08.2005 (24)

**Species** : rabbit  
**Concentration** : undiluted  
**Exposure** : Occlusive  
**Exposure time** : 24 hour(s)  
**Number of animals** : 6  
**Vehicle** :  
**PDII** : 4.3  
**Result** : moderately irritating  
**Classification** :  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:purity not defined.

**Method** : 0.5ml of neat 3,4-DCBTF was held under an impervious patch in continuous 24-hour contact with the closely shaven skin.

**Result** : Hours Reaction Mean Values of six rabbits

Erythema

24	Intact	2
72	Intact	2
24	Abraded	2
72	Abraded	2

Edema

24	Intact	4
72	Intact	0
24	Abraded	4
72	Abraded	1.3

Draize scoring method used.

P.I.I. Score: 4.3

**Test condition** : TEST CONDITIONS

Test Animals: Rabbits, 6 tested; strain, sex, age, source and weight at study initiation, unknown

Administration/Exposure: Draize and Woodard, 1949.

Preparation of Test Substance: undiluted.

Area of Exposure: unknown; Occlusion: Yes; Total volume applied: 0.5 ml for 24 hours.

Examinations: Draize and Woodard, 1949

**Conclusion** : Under the conditions of this study, 3,4-DCBTF is considered moderately irritating.

22.08.2005

(28)

## 5.2.2 EYE IRRITATION

**Species** : rabbit  
**Concentration** : .1 undiluted  
**Dose** : ml  
**Exposure time** : 24 hour(s)  
**Comment** : rinsed after (see exposure time)  
**Number of animals** : 6  
**Vehicle** : none  
**Result** : not irritating  
**Classification** :  
**Method** : Draize Test  
**Year** :  
**GLP** : no data  
**Test substance** : no data

**Result** : Table 1.  
Summary of Eye Irritation

Average	Day	Total Score
	1 hour	3.3
	1	0.7
	2	1.3
	3	1.0
	4	0
	7	---

**Test condition** : TEST ANIMALS:  
- Strain: Data not provided  
- Sex: Male and female  
- Source: Data not provided  
- Age: Data not provided  
- Weight at study initiation: 1.8-2.4 kg  
- Number of animals: Six; mixed sexes used.  
- Controls: None

### ADMINISTRATION/EXPOSURE

- Preparation of test substance: Data not provided  
- Amount of substance instilled: 0.1 ml single dose with no wash for 24 hours  
- Vehicle: None

- Postexposure period: Up to seven day observation.

#### EXAMINATIONS

- Ophthalmoscopic examination: Data not provided.
- Scoring system: Draize
- Observation period: 1 hour; Days 1, 2, 3, 4, and 7
- Tool used to assess score: Data not provided.

**Conclusion** : Under the conditions of this study, 3,4-Dichlorobenzotrifluoride produced "no effects" for ocular irritation. (29)  
16.08.2005

**Species** : rabbit  
**Concentration** : undiluted  
**Dose** : .1 ml  
**Exposure time** :  
**Comment** :  
**Number of animals** : 6  
**Vehicle** :  
**Result** : slightly irritating  
**Classification** :  
**Method** :  
**Year** :  
**GLP** :  
**Test substance** : other TS: no data

**Method** : 0.1 ml near material was introduced into the conjunctival sac.  
**Result** : Conjunctival effects only (1/6) 2 score - mean value 0.3, all irritation reversible within 72 hours.

**Test condition** : TEST CONDITIONS  
Test Animals: Rabbits, 6 tested, strain, sex, age, source and weight at study initiation, unknown

Administration/Exposure: Preparation of Test Substance: undiluted; Amount of Substance Instilled: 0.1 ml; Post-Exposure Period: Scored at 24, 48 and 72 hours post-dosing.

Examinations: Ophthalmoscopic examination: No; Scoring system: unknown; Tool Used to Assess Score: unknown

**Conclusion** : slightly irritating (30)  
09.05.2005

### 5.3 SENSITIZATION

**Type** : Buehler Test  
**Species** : guinea pig  
**Concentration** : 1<sup>st</sup>: Induction 10 occlusive epicutaneous  
2<sup>nd</sup>: Challenge 10 other:no data  
3<sup>rd</sup>:  
**Number of animals** : 12  
**Vehicle** : other:ethyl alcohol  
**Result** : not sensitizing  
**Classification** : not sensitizing  
**Method** :  
**Year** :

**GLP** : no data  
**Test substance** : other TS:Client-Mobil Chemical Company has data

**Result** : Slight irritation noted, second induction day only, on 7 animals and on 1 or 2 animals during the remainder of the induction period.

- Clinical signs: No data provided
- Topical Challenge: 0 out of 9
- Systemic Challenge: 0 out of 9

**Test condition** : TEST ANIMALS:

- Strain: Data not provided
- Sex: Male
- Source: Data not provided
- Age: Data not provided
- Weight at study initiation: 200 - 300 gm
- Number of animals: Twelve
- Controls: None

ADMINISTRATION/EXPOSURE

- Study type: Buehler
- Preparation of test substance for induction: Diluted 10% w/v concentration in ethyl alcohol
- Induction schedule: Nine sensitizing topical, occluded applications (6 hours/day) over 21 day period.
- Concentrations used for induction: 10%w/v concentration in ethyl alcohol
- Challenge schedule: To determine local and systemic effects there were two challenge applications 14 days after induction.
- Concentrations used for challenge: Data not provided
- Rechallenge: None
- Positive control: None

EXAMINATIONS

- Grading system: Since non-irritating concentrations were used, any reaction indicated positive response; the severity of which was proportional to the score obtained.

**Conclusion** : Under the conditions of this test, 3,4-DCBTF is not a sensitizing material in guinea pigs.

22.08.2005

(31)

#### 5.4 REPEATED DOSE TOXICITY

**Type** : Sub-acute  
**Species** : rat  
**Sex** : male/female  
**Strain** : Sprague-Dawley  
**Route of admin.** : oral feed  
**Exposure period** : 28 days  
**Frequency of treatm.** : daily  
**Post exposure period** : none  
**Doses** : 2, 20, 200 and 2000 ppm in diet

**Control group** : yes  
**NOAEL** : < 20 ppm  
**Method** :  
**Year** :  
**GLP** : yes  
**Test substance** : other TS:data was maintained by Hooker Chemical and Plastics Company

**Method** : TEST ORGANISMS:  
Sprague-Dawley rat: 45-55 g.

**ADMINISTRATION/EXPOSURE:**

Groups of 45 animals; 5 per sex per dose level were fed 2, 20, 200 and 2000 ppm DCBTF or control daily via the diet from weaning through 28 days. Mazola corn oil served as the carrier and Purina Lab Chow (lot 511781) served as the basal diet. The test material was brought up to 2% by weight with corn oil, then totally admixed into Purina Laboratory Chow.

A sample of each diet were assayed for the presence and stability of the test material.

**CLINICAL OBSERVATIONS AND FREQUENCY:**

Animals were observed twice daily for signs of toxicity and morbidity/mortality. Individual body weights were taken on test days 0, 7, 14, 21 and 28. Individual feed consumption were calculated weekly at 7, 14, 21, and 28 days on test.

A gross pathology exam was performed and selected tissues were collected and preserved for possible future histologic examinations.

Ophthalmoscopic examinations were not performed during the study.

**ORGANS EXAMINED AT NECROPSY:**

Prior to necropsy blood and urine samples were collected for preliminary analytical work for determination of blood and urine levels of the test material.

A complete necropsy examination was conducted on each animal. The following organs/tissues were collected and preserved in alcohol-formalin acid fixative (AFA): eyes, brain, pituitary, salivary gland, thyroid, trachea, esophagus, stomach, skin, duodenum, jejunum, colon, lungs, heart, diaphragm, liver, spleen, kidneys, testes, ovaies, prostate, uterus, seminal vesicles, ileum, urinary bladder, bone (femur), bone marrow and muscle from each animal. Should data collected or observations made indicate that there is a need for more definitive evaluation microscopic examination will be made on pertinent tissues.

**STATISTICAL METHODS:**

Body weights were analyzed via ANOVA.

**Remark** : The purpose of this study was to collect data that would aid in

**Result**

establishing dose levels for a 90-day feeding and reproduction study.

- : Consumption of 3,4-DCBTF caused no obvious deleterious effects in the rats through 28 days.

**TOXIC RESPONSE/EFFECTS:**

Clinical Observations: Daily observations revealed no abnormal behaviour or appearance in any of the groups.

Body Weights: Analysis of variance on body weights revealed no statistically significant differences among male groups; there was a trend toward lower body weights in the males receiving 2000 ppm 3,4-DCBTF in the diet. Females showed slight differences among the groups at weeks 1 and 2, but no difference at weeks 3 and 4. BW gains were generally normal for all groups.

Feed consumption: Feed consumption were slightly less in the 200 and 2000 ppm male group when compared to the controls.

Necropsy: All animal were essentially normal. No lesions noted in the lung and lymph were considered treatment-related.

**ACTUAL DOSE RECEIVED:**

Analysis of 3,4-DCBTF in the feed for 2, 20, 200 and 2000 ppm levels 2, 20, 211, and 2440 ppm, respectively was analyzed in the diet. The presence of the 3,4-DCBTF in the finished diets was confirmed at all levels.

No treatment-related deaths were observed at any dose level.

Blood Samples/Urinalysis: Detectable dose-related levels of 3,4-DCBTF were found in the blood of 200 ppm and 2000 ppm males and females. Detectable levels of 3,4-DCBTF were found in the pooled urine from 200 ppm (0.07 ppm 3,4-DCBTF) and 2000 ppm (0.13 ppm DCBTF) male groups, but not in any female dose groups.

Chromatograms of the blood and urine samples in which 3,4-DCBTF was detected showed the presence of relatively large quantities of unknown components as evidenced by two unidentified peaks. Based on peak area measurements, the two unknown components were present in the samples in quantities about equal to those of 3,4-DCBTF. No further quantitation or identification attempts were made for the two unidentified components.

Gross Pathology: Essentially all organs and tissues appeared normal.

**Reliability**

- : (3) invalid  
Noted on the front of the report. This study is considered by OCC to be invalid because of uncertainties regarding feed stability; statements in the body of the report notwithstanding.

The high volatility of 3,4-DCBTF makes it questionable whether being mixed in the diet was the best route of administration. The

stability and actual concentration in an open system of feed mixing and daily diet would be difficult for a volatile compound.

**Flag** : Critical study for SIDS endpoint (32)  
22.08.2005

**Type** : Sub-acute  
**Species** : rat  
**Sex** : male/female  
**Strain** : Sprague-Dawley  
**Route of admin.** : gavage  
**Exposure period** : 14 days  
**Frequency of treatm.** : Daily  
**Post exposure period** : none  
**Doses** : 7.5, 15, 30, 60 and 120 mg 3,4-DCBTF/kgBW/day  
**Control group** : yes, concurrent vehicle  
**Method** :  
**Year** :  
**GLP** : no  
**Test substance** : other TS:no data shown; data was maintained by Hooker Chemical and Plastics Company

**Result** : ACTUAL DOSE RECEIVED:  
Initials assays were much higher. It was suspected that the corn oil dilutions had not been properly mixed before sampling. When resampled after swirling the dilutions in the flask the assay confirmed the dose level.

TOXIC RESPONSE/EFFECTS:  
Clinical Observations: No treatment-related deaths were observed at any dose level. In general, the animals appeared to be healthy during the test period. One animal died and one was sacrificed moribund. Corn oil aspiration and injuries received during dosing attributed early deaths.

Body Weights/Feed consumption: No significant differences in body weight or feed consumption.

Hematology: No treatment-related changes in hematology were found.

Organ Weights: Mean male terminal absolute and relative liver weights in Group 6 and mean weight in Group 4 were significantly increased over the Control group.

Gross Pathology: There was a relatively low frequency of females with lesions, 5 of 30 animals had notations. Four of the 5 animals had a kidney lesion, but they were seen in both control and test groups. There was a higher frequency of male with lesions, 2 or 3 animals of 5 in each group had notations. The lung lesions seen are common in adult rats and were seen in 2 control males. The liver and kidney lesions, while generally mild in severity and no significant difference in incidence among the groups, were seen only in 3,4-DCBTF groups. Further investigation or evaluation in terms of compound related effects cannot be made without a

histologic review of kidneys and livers in all groups.

A significant increase in mean liver weight and liver weight to body weight ratios were seen in Group 6 and in weight Group 5 when compared to the control group. No correlation can be made, however, between the weight increase and the number of liver lesions noted at necropsy. A histopathologic evaluation of the livers would be needed to determine whether the weight differences were due to physiological or pathological changes.

Histopathology:

Further histopathologic interpretation and evaluation was conducted. The results are as follows:

Changes in the liver were of low incidence and were not toxicologically significant.

Varying degrees of congestion occurred in examined kidneys from rats receiving DCBTF, but the incidence was low and not clearly dose related. Hyaline droplet degeneration of tubular epithelium within the renal cortex occurred in the kidneys of five male rats, three of which were in the high treatment group. This lesion occurs spontaneously in the glomerulonephrosis syndrome of rats, but the latter is infrequent in animals of this age. Because of this, the degenerative changes found in the kidney may be test related.

**Test condition**

: TEST ORGANISMS:

Albino CD rat (Sprague-Dawley derived)

ADMINISTRATION/EXPOSURE:

Five rats/sex/treatment group were dosed daily at 0, 7.5, 15, 30, 60 and 120 mg/kg body weight 3,4-DCBTF via gavage. The weight/volume dilution was made up so as to dose approximately 2 ml to males and 1 ml to females.

Mazola corn oil was used as the diluent and concurrent vehicle control.

Dilutions of 3,4-DCBTF in corn oil were assayed for the presence of the test material. Initial assays were higher than claim. It was suspected that the corn oil dilutions had not been properly mixed before sampling, and when resampled after swirling the dilutions in the flask confirmed the claimed dose level.

CLINICAL OBSERVATIONS AND FREQUENCY:

Animals were observed twice daily, 7 days a week, for signs of toxicity and morbidity/mortality. Individual body weights were collected initially and daily through termination.

Individual feed consumption was recorded weekly.

NECROPSY

Observations recorded at necropsy was conducted on each animal after 14 days on test, but were limited to the lungs, liver and kidney. Livers were weighed at termination.

Erythrocyte count, total and differential leucocyte count,

hemoglobin, and hematocrit were determined on each animal at termination.

Abnormal tissues were preserved.

Ophthalmoscopic examinations were not performed during the study.

**Reliability** : (2) valid with restrictions (33)  
16.08.2005

**Type** : Sub-acute  
**Species** : rat  
**Sex** : male/female  
**Strain** : Sprague-Dawley  
**Route of admin.** : gavage  
**Exposure period** : 14 days  
**Frequency of treatm.** : daily  
**Post exposure period** : none  
**Doses** : 7.5, 15, 30, 60, and 120 mg/kg/day  
**Control group** : yes, concurrent vehicle  
**Method** :  
**Year** :  
**GLP** : yes  
**Test substance** : other TS:purity = 95%, chemically stable and moderately volatile.

**Remark** : This test was conducted to establish dose levels for the 90 day reproduction study. Doses selected were 5, 15 and 45 ng/kg/day.

**Result** : Clinical observations, clinical pathology parameters, and gross pathological examinations showed no treatment-related abnormalities.  
Treatment-related effects were observed in mean liver weights and liver/body weight ratios between treatment groups and control. This was not statistically significant and probably reflects a physiologic response to a foreign substance inducing an increase in metabolic activity.

**Test condition** : Three rats/sex/treatment group were dosed daily via gavage in 4 ml/kg bw volumes.

Corn oil was used as the diluent and for the concurrent vehicle control.

Doses were adjusted biweekly to correspond with body weight changes.

A sample of each prepared solution was assayed by Elars Chemistry Department prior to use to ensure proper formulation.

Clinical pathology data were collected on one animal per sex per dose group prior to terminal sacrifice.

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## 5.5 GENETIC TOXICITY 'IN VITRO'

<b>Type</b>	: Sister chromatid exchange assay
<b>System of testing</b>	: Fischer mouse lymphoma cell line L5178Y.
<b>Test concentration</b>	: 0.625 ul/ml; 1.250 ul/ml; 2.500 ul/ml; 5.000 ul/ml; 10.000 ul/ml
<b>Cycotoxic concentr.</b>	: 1.250 ul/ml; 2.500 ul/ml; 5.000 ul/ml; 10.000 ul/ml
<b>Metabolic activation</b>	: with and without
<b>Result</b>	:
<b>Method</b>	:
<b>Year</b>	:
<b>GLP</b>	: no data
<b>Test substance</b>	:
<b>Result</b>	: GENOTOXIC EFFECTS: <ul style="list-style-type: none"><li>- With metabolic activation: DCBTF is more clearly positive. When compared to the solvent control, DCBTF induced significant increases in SCE frequency at the four highest dose levels. When tested against the negative (medium) control, only the highest dose yielded positive results; but the compound must nevertheless be regarded as active in this assay because the SCE frequency increases consistently with dose.</li><li>- Without metabolic activation: DCBTF failed to induce stastically significant increases in SCE frequency (compared to solvent control) at any dose level. There is, however, the suggestion of a dose response. This may indicate that the compound is a weak inducer of SCEs in the absence of activation.</li></ul>
	FREQUENCY OF EFFECTS: Table 1
	PRECIPITATION CONCENTRATION: MITOTIC INDEX: CYTOTOXIC CONCENTRATION: <ul style="list-style-type: none"><li>- With metabolic activation:</li><li>- Without metabolic activation:</li></ul>
	TEST-SPECIFIC CONFOUNDING FACTORS: STATISTICAL RESULTS:
<b>Test condition</b>	: STATISTICAL ANALYSES: t-statistic, P<0.01 SYSTEM OF TESTING <ul style="list-style-type: none"><li>- Species/cell type: L5178Y mouse lymphoma cells</li><li>- Metabolic activation system: S-9 mixture</li><li>- No. of metaphases analyzed: collected by centrifugation</li></ul>
	ADMINISTRATION: <ul style="list-style-type: none"><li>- Dosing: DCBTF: 0.625, 1.259, 2.5, 5.0 and 20.0 ul/ml; DMSO 0.1 ml and DMN: 0.3 ul/ml.</li><li>- Positive and negative control groups and treatment: Negative Control (medium), Solvent Control (DMSO), Positive Control (Ethylmethanesulfonate and Dimethylnitrosamine), and DCBTF.</li></ul>
	CRITERIA FOR EVALUATING RESULTS: Based on relative increase in Sister Chromatid Exchange with respect to dose

compared to the spontaneous level.

**Conclusion** : Under the conditions of this study, 3,4- DBCTF appears to be weakly positive without activation and clearly positive with activation.

**Flag** : Critical study for SIDS endpoint (35)  
22.08.2005

**Type** : other: Ames Salmonella/Microsome Plate Test

**System of testing** : Salmonella typhimurium - TA-1535, 1537, 1538, 98 and 100.  
Saccharomyces cerevisiae - D4.  
E. coli - W3110/po1A+; P3478/po1A-.

**Test concentration** : 0.01 ul; 0.1 ul; 1.0 ul; 5.0 ul; 10 ul per plate.

**Cycotoxic concentr.** : Toxic to all strains except D4 at 10 ul per plate and toxic to the strains TA-1537, TA-1538 and TA-100 at 5 ul per plate.

**Metabolic activation** : with and without

**Result** : negative

**Method** :

**Year** :

**GLP** :

**Test substance** : other TS:

**Result** : GENOTOXIC EFFECTS:  
- With metabolic activation: Negative  
- Without metabolic activation: Negative  
PRECIPITATION CONCENTRATION: 0.01, 0.1, 1.0, 5.0 & 10.0 ul

**Test condition** : SYSTEM OF TESTING  
- Species/cell type: Salmonella typhimurium TA-1535, TA-1537, TA-1538, TA-98 and TA-100; Saccharomyces cerevisiae D4; E. coli W3110/po1A+, P3478/po1A-  
- Metabolic activation system: Reaction mixture of TPN (sodium salt), Glucose-5-phosphate, sodium phosphate (dibasic), MgCl<sub>2</sub>, KCl and Homogenate S9 Fraction. The S9 homogenate was prepared from Sprague-Dawley adult male rat liver induced by Aroclor-1254 five days prior to kill according to the procedure of Ames et al. Positive chemical controls and either deionized water or dimethylsulfoxide (DMSO).

EXPERIMENTAL DESIGN:  
- Plate Test (Agar Incorporation): Plates incubated for 48 hours at 37 C and scored for the number of colonies growing on each plate. D4 yeast plates were incubated at 30 C (nonactivation) and 37 C (activation) for 3-5 days and then scored.  
- DNA Repair Test with po1A+ and po1A- Mutants of E. Coli: conducted using the procedures outlined by Slater et al (Cancer Res., 31:970, 1971).

CRITERIA FOR EVALUATING RESULTS: Surviving Populations, Dose-response Phenomena, Control Tests; Ames Assay - strains, pattern and reproducibility, and Relationship between Mutagenicity and Carcinogenicity.

**Conclusion** : Under the conditions of this study, 3,4-DCBTF did not demonstrate mutagenic activity in any of the assays conducted in

16.08.2005

this evaluation and was considered not mutagenic.

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## 5.6 GENETIC TOXICITY 'IN VIVO'

**Type** : other: In Vivo/In Vitro Urine Assay  
**Species** : mouse  
**Sex** : male  
**Strain** : CD-1  
**Route of admin.** : gavage  
**Exposure period** : two days  
**Doses** : 50, 167, and 500 mg/kg  
**Result** : negative  
**Method** :  
**Year** :  
**GLP** : no data  
**Test substance** : other TS:

**Remark** : 3,4-DCBTF was not active in the urine assay. No evidence of mutagenic material was found in the urine of animals exposed to 3,4-DCBTF.

The urine collected from each group of control and treated animals were either examined directly or following treatment with beta-glucoronidase for the presence of mutagenic activity.

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## 5.7 CARCINOGENICITY

### 5.8.1 TOXICITY TO FERTILITY

### 5.8.2 DEVELOPMENTAL TOXICITY/TERATOGENICITY

### 5.8.3 TOXICITY TO REPRODUCTION, OTHER STUDIES

**Type** : other:Modified 90 Day Gavage and Reproduction Study  
**In vitro/in vivo** : In vivo  
**Species** : rat  
**Sex** : male/female  
**Strain** : Sprague-Dawley  
**Route of admin.** : gavage  
**Exposure period** : 90 Days  
**Frequency of treatm.** : Parents - daily for 4 weeks prior to mating and through one reproduction period until F1 litters had been weaned.

F1 - Day 21 of age; daily for 90 days.

**Duration of test** : Parental rats for 76 to 83 days; weaning at least 90 days  
**Doses** : 2 ml/kg BW volumes; 5 mg/kg/day, 15 mg/kg/day, 45 mg/kg/day

<b>Control group</b>	:	yes, concurrent vehicle
<b>Method</b>	:	
<b>Year</b>	:	
<b>GLP</b>	:	yes
<b>Test substance</b>	:	other TS:95%purity, chemically stable and moderately volatile
<b>Method</b>	:	Modified 422
<b>Result</b>	:	Treatment-related effects observed in organ weights and organ/body weight ratios between treatment groups and control. The effects seen, primarily increased liver and kidney parameters, reflected a physiologic response of these organs to 3,4-DCBTF. The increased metabolic response did not reflect necessarily a toxic response to the test material. No other treatment related effects were observed.
		The histopathologic examination of tissues and organs did not reveal evidence of tissue reaction that could be attributed to administration of 3,4-DCBTF.
		Under the conditions of the test and at the dosages given, 3,4-DCBTF was found to be safe at all levels. A toxic no-effect level in rats was greater than or equal to 45 mg/kg. If the physiologic response of the liver and kidney are considered treatment related, a no-effect level was 5 mg/kg.
<b>Test condition</b>	:	Subchronic testing in (F1) weanling rats following in utero exposure. Rats were dosed in 2 ml/kg body weight volumes. Test material was administered to the parental rats for 76 to 83 days. Weanling rats were dosed for at least 90 days.
		Weekly body weight and feed consumption, clinical pathology, urinalysis, and gross necropsy performed. Gross pathology and histopathological examinations were performed on all weanling rats, and selected organ weights were recorded.
<b>Conclusion</b>	:	Analysis of Test Material in Blood Plasma was performed. Under the conditions of the test and at the dosages given, 3,4-DCBTF was found to be safe at all levels. A toxic no-effect level in rats was greater than or equal to 45 mg/kg. If the physiologic response of the liver and kidney are considered treatment related, a no-effect level was 5 mg/kg.
<b>Reliability</b>	:	(2) valid with restrictions
<b>Flag</b>	:	Critical study for SIDS endpoint
22.08.2005		(38) (39)

## 5.9 SPECIFIC INVESTIGATIONS

## 5.10 EXPOSURE EXPERIENCE

## 5.11 ADDITIONAL REMARKS

**Type** : other: mutagenicity

**Conclusion** : The test compound, 3,4-dichlorobenzotrifluoride, was not active in the urine assay. No evidence of mutagenic material was found in the urine of animals exposed to the agent under the conditions described in the protocol.

15.08.2005 (40)

06.07.2005 (41)

**Conclusion** : Chlorinated benzotrifluorides were not detected (<0.01 ppm).  
22.08.2005 (42)

## **6.1 ANALYTICAL METHODS**

## **6.2 DETECTION AND IDENTIFICATION**

**7.1 FUNCTION**

**7.2 EFFECTS ON ORGANISMS TO BE CONTROLLED**

**7.3 ORGANISMS TO BE PROTECTED**

**7.4 USER**

**7.5 RESISTANCE**

**8.1 METHODS HANDLING AND STORING**

**8.2 FIRE GUIDANCE**

**8.3 EMERGENCY MEASURES**

**8.4 POSSIB. OF RENDERING SUBST. HARMLESS**

**8.5 WASTE MANAGEMENT**

**8.6 SIDE-EFFECTS DETECTION**

**8.7 SUBSTANCE REGISTERED AS DANGEROUS FOR GROUND WATER**

**8.8 REACTIVITY TOWARDS CONTAINER MATERIAL**

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- (2) Chapman ML (1986) Engineering Report of Exposure and Release Analysis 3,4-Dichlorobenzotrifluoride, US EPA Chemical Engineering Branch.
- (3) Domestic Supplier's Material Safety Data Sheet - Hooker Chemicals
- (4) Material Safety Data Sheet (1981) Rohm and Haas, Co.
- (5) Skotnicki and Cortellucci (June 1980) Solubility of 3,4 Dichlorobenzotrifluoride in Water. Hooker Chemical Company, Laboratory Study Number - HCPC-SCD-S-80-202.0.
- (6) Martinson JP, Silveira M, Fackler PH, and Conroy WJ (1988). Determination of Ready Biodegradability of 3,4-Dichlorobenzotrifluoride by the Closed Bottle Method. SLS Report No.: 88-5-2729; Study No: 10826-0987-6104. Springborn Life Sciences, Inc. Wareham, Massachusetts for Occidental Chemical Corporation Niagara Falls, NY USA.
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- (8) Surprenant, D.C. (1988) Acute Toxicity of 3,4-Dichlorobenzotrifluoride to Fathead Minnow (*Pimephales promelas*) Under Flow-Through Conditions. SLS Report #88-6-2755; SLS Study #10826.0987.6102.106. Springborn Life Sciences, Inc., Wareham, Massachusetts for Occidental Chemical Corporation Niagara Falls, New York, USA.
- (9) Acute toxicity of 3,4-Dichlorobenzotrifluoride to Rainbow Trout (*Salmo gairdneri*) under flow-through conditions (1988). SLS Report #88-6-2744; SLS Study #10826.0987.6102.108. Springborn Life Sciences, Inc. Wareham, Massachusetts for Occidental Chemical Corporation Niagara Falls, New York, USA.
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- (14) Surprenant DC and McNamara PC (1988). Acute Toxicity of 3,4-Dichlorobenzotrifluoride to Gammarids (*Gammarus fasciatus*) Under Flow-Through Conditions. SLS Report #88-8-2785 SLS Study #10826.0987.6102.119. Springborn Life Sciences, Inc. Wareham, Massachusetts for Occidental Chemical Corporation, Niagara Falls, NY USA.
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**10.1 END POINT SUMMARY**

**10.2 HAZARD SUMMARY**

**10.3 RISK ASSESSMENT**