MEMORANDUM

SUBJECT:  EPA Reg. No./File Symbol  50534-7 Technical Chlorothalonil
         50534-114 Tufficide 960
         50534-157 Bravo 90DG
         50534-195 Daconil 2787 WDG
         50534-24 Technical Daconil 2787

FROM:  William S. Woodrow  USW 5-18-90
        Precautionary Review Section
        Registration Support Branch
        Registration Division (H7505C)

TO:    Lewis Stone  (PM 21)
        Fungicides-Herbicides Branch
        Registration Division (H7505C)

APPLICANT:  Fermont Plant Protection Co.
            5966 Westley Rd.
            P.O. Box 8000
            Mentor, OH 44061-8000

FORMULATION FROM LABEL:

Active Ingredient(s):
Chlorothalonil (tetrachloroisophthalonitrile)  % by wt.
                                      96.0  90.0

Inert Ingredient(s):  . . . . . . . . . . . . . .  4.0  10.0

Total  100.0%
BACKGROUND

The Fermenta ASC Corp. requested precautionary labeling changes and/or the addition of label use claims for the following chlorothalonil products, whose Confidential Statements of Formulas are similar enough to utilize a single set of supporting acute toxicity data:

FPA 50534-114 Tuffcide 960
chlorothalonil 96.0%  
Inerts 4.0%  

50534-2 Technical Chlorothalonil
chlorothalonil 96.0%  
Inerts 4.0%  

50534-24 Technical Daconit 27871
chlorothalonil 96.0%  
Inerts 4.0%  

50534-157 Bravo 90 DG
chlorothalonil 90.0%  
Inerts 10.0%  

50534-195 Daconit 2787 WDG
chlorothalonil 90.0%  
Inerts 10.0%  

[Signature]
RECOMMENDATIONS

1) Precautionary labeling change requests:

a. Request to delete "may be a potential skin sensitizer," under Precautionary Statements for:
   50534-114 Tuffside 960;
   50534-7 Technical Chlorothalonil and;
   50534-24 Technical Dacnil 2787.

RSR/PRS recommendation: This request is justified. Dermal Sensitization study conducted using Technical chlorothalonil (MIRD 1441/2, Lab. #7020, 4-15-82) indicated a non-sensitizer.

b. Fermenta Corp. is justified in removing all statements from the following labels referring to "chlorothalonil....or this product may produce temporary allergic side effects....", or "Note to Physicians: Persons having an allergic reaction respond to treatment with antihistamines....":
   50534-114 Tuffside 960;
   50534-7 Technical Chlorothalonil;
   50534-24 Technical Dacnil 2787;
   50534-157 Bravo 90 DG, and;
   50534-195 Dacnil 2787 WDG.
c. Fermenta Corp. request to add:

"Note to Physician: Persons having temporary irritation symptoms may respond to treatment with antihistamines or steroid creams and/or systemic steroids" is acceptable to RSB/PRS.

NOTE TO PM: The Fermenta "Note to Physician is acceptable provided "may" is inserted into the phraseology suggested by Fermenta.

The "Note to User: This product may produce mild bronchial irritation and temporary irritation of the skin characterized by redness or rash on exposed skin areas. Affected persons should call a physician" proposed by Fermenta is also acceptable to RSB/PRS for the following product labels:

50534-114
50534-7
50534-24
50534-157
50534-105
2) The Fermenta Corp. requests permission to add "Prevents fungal growth on caulks, non-food grade sealants and adhesives" to the 50534-114 Tuffcide 960 product label.

The Fermenta Corp. request to add caulks, non-food grade sealants and adhesives to the 50534-114 Tuffcide 960 label is acceptable to RSB/PRS; a complete acute toxicity profile for 50534-114, as well as for the products listed below:

- 50534-114
- 50534-7
- 50534-24
- 50534-157
- 50534-195

The toxicity profile for the products listed above consists of:

Acute oral study (Braun, 50534-157, 90.0% A.I.)
ACC. NO. 253856, May 16, 1993
Tox. Category IV, Core Guidelines
Acute Dermal Study, using 90.0% Bravo 90 DG
Tox. Category IV Core Guidelines

Acute Inhalation study, using Technical Chlorothalonil
MRID No. 000944942. This study listed as
acceptable in Chlorothalonil Reg. Standard (no
additional inhalation data needed). Tox. Category
Core Grade not given in Reg. Standard.

Eye Irritation study, using Bravo 90 DG (90.0% A.I.),
Toxicity Category I Core minimum

Dermal irritation study, using Bravo 90 DG
(90.0% A.I.), May 16, 1983.
Acc. No. 253 856
Tox. Category IV Core Guidelines

Dermal sensitization study, using Technical
Chlorothalonil (97.0% A.I.)
MRID No. 144112, 4-15-82.
Not a contact sensitizer Core Guidelines
1) The DANGER signal word is appropriate.
2) The Precautionary Statements are acceptable.
3) The Statement of Practical Treatment is acceptable.
4) Deletion of the "may be a potential skin sensitiser" from the
   50534-114 Tufcide 960,
   50534-24 Technical Deconl 2787, and
   50534-7 Technical Chlorothalonil labels is acceptable.
5) Deletion of statements regarding temporary allergic side effects, and Note to Physician as indicated on sample labels provided by the registrant is acceptable. The deletion of "Note to User" under Directions For Use is acceptable.
6) The addition of a Note to Physician as indicated on sample labels is acceptable provided the word "may" is inserted between the words symptom and respond ...
7) The addition of a "Note to User" as shown on the sample labels is acceptable.
The label deletions and additions shown under 5, 6, and 7 above concern products: 50534-114 Tufaflor 960
50534- Technical Chlorothalonil
50534-24 Technical Daconil 2787
50534-157 Bravo 90 DG, and
50534-190 Daconil 2787 WDG
DATA REVIEW FOR SKIN SENSITIZATION TESTING (§81-6)

Product Manager: (21) Reviewer: (Handwritten)
MRID No.: 144112 Report Date: 5-10-90
Testing Laboratory: Food & Drug Res. Lab., Inc. Report No. FDL & 9720
Author(s): N.H. Wilson, M.A. Gallo
Species: guinea pig, Hartley
Sex: Weight: 260-300g
Source: Charles River Labs., MA
Test Material: Technical Chlorothanil (TC)
Positive Control Material: Dimethylchlorobenzene (DNCB)
Quality Assurance (40 CFR §160.12): Adequate

Method: Open epicutaneous

Summary:
1. This product is not a dermal sensitizer.
2. Classification: guideline

Procedure (Deviation From §81-6):
A preliminary dose range test was conducted, E TC diluted in physiological saline.
5 clipped, 2cm, areas on backs of 8 guinea pigs were treated = 100% TC (1g) mixture: 2ml of 30%, 10%, 3% and 1%

Results: 1% mix of TC in saline were applied on 2cm sq. gauge patches. Patches included E Blenderm tape + linen - 24hr contact. 100% TC: mixture slightly = saline used for main study.

Induction: Group Treatment Dose 10 animals
A TC 0.2g (100%) + 10
B DNCB (control) 0.2ml 10
(0.07%)**
C Phys-saline (vehicle control) 0.2ml 10

* Mixture slightly + saline
** 80% ETOH for induction; a catane for challenge
A% 0.2ml on 2cm sq. gauge patches applied to clipped dorsal areas and covered (as described above). 24-hour contact. Repeated 5x weekly to 10 applications - left scapula. All scoring (according to Draize) at 14 48 hrs post dose. 14-day rest following last
induction application

Challenge:
Each animal received 0.2 g or 0.2 ml of appropriate material on some patches applied to clipped left flank skin. In addition Td and control groups received 0.2 g or 0.2 ml to right flank areas; all patches secured + occluded as described above.

Challenged sites were scored at 1, 24, 48 hrs after removal of patches.

Results:
1) Technical chlorothalonil - Some irritation was evident (0.3 - 0.7 scores) during induction #5 through #8 only. All challenge scores were 0.00.
2) DNCB - control - The group (3 animals and 10 applications @ 24 hours) = 0.86; for induction
The DNCB 24 hour challenge reading = 1.8; then
DNCB did sensitization.
3) The animals treated with phys. saline alone (vehicle control) - induction and challenge scores were 0.00.

Conclusion: Technical chlorothalonil diluted in phys. saline or primer contained saline did not sensitize guinea pigs.
DATA REVIEW FOR SKIN SENSITIZATION TESTING (§81-6)

Product Manager: (21) Reviewer: M. Walter
MRID No.: 405460-01 Report Date: 5-9-98
Testing Laboratory: Univ. of Texas, Dept. of Dermatol. Report No. 1094-98-0024-TX-001
Author(s): N.E. Wilson, V.C. Killian
Species: Guinea Pig, Male
Sex: Male Weight: 300g
Source: Hazleton Dutchland, Denver, PA
Test Material: Technical Chlorothalnil
Positive Control Material: None mentioned
Quality Assurance (40 CFR §160.12): adequate

Method: 1- open epicutaneous study
       2- maximization studies

Summary:
1. This product is not a dermal sensitizer.
2. Classification: Not a dermal sensitizer (see one lines) study

Procedure (Deviation From §81-6):

Three preliminary irritation studies were conducted using saline - salin (0.1% W/V chlorothalnil/saline), petrolatum, and acetone. 2nd irritation study - 0.001, 0.01 and 0.1% (W/V) chlorothalnil in acetone. Test 14 different dermal

Results: Application 1) using the 3rd irritation study, gross
observation for edema, and irritation + histopathologic

Induction:

Three separate epicutaneous studies were conducted;
2- Maximization studies, 1- open epicutaneous study.

The procedure and results of the three sensitization studies are shown on the next 3 pages.

Quoted from the tester report:
First sensitization evaluation of Chlorothalonil:
Quoted from the lab's report:

STUDY DESIGN FOR THE SENSITIZATION TESTING IN THE FIRST GUINEA PIG MAXIMIZATION STUDY WITH TECHNICAL CHLOROTHALONIL (TC)

<table>
<thead>
<tr>
<th>Material Administered</th>
<th>Test Group</th>
<th>Control Group</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5M+5F</td>
<td>5M+5F</td>
<td></td>
</tr>
<tr>
<td><strong>Induction Phase</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Day 0</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>- six i.d. injections</td>
<td>0.5% (v/v) TC in acetone</td>
<td>acetone</td>
<td>0.1 ml/site x 2 sites</td>
</tr>
<tr>
<td>per animal:</td>
<td>+ 0.5% (v/v) TC in acetone/FCA (50:50)</td>
<td>acetone/FCA (50:50)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ acetone/FCA (50:50)</td>
<td>acetone/FCA (50:50)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- one topical application per animal:</td>
<td>1.0% (v/v) TC in acetone</td>
<td>acetone</td>
<td>0.1 ml/site x 1 site</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Challenge Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- two topical applications per animal:</td>
<td>0.001% (v/v) TC in acetone</td>
<td>acetone</td>
<td>0.05 ml/site x 1 site</td>
</tr>
<tr>
<td></td>
<td>+ acetone</td>
<td>acetone</td>
<td></td>
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</tr>
<tr>
<td><strong>Rechallenge Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- two topical applications per animal:</td>
<td>0.001% (v/v) TC in acetone</td>
<td>acetone</td>
<td>0.075 ml/site x 1 site</td>
</tr>
<tr>
<td></td>
<td>+ acetone</td>
<td>acetone</td>
<td></td>
</tr>
</tbody>
</table>

FCA - Freund's Complete Adjuvant unquoted. RESULTS

1) Control Group 0.00 at 24 & 48 hours
2) Test (0.075 ml 0.001% solution Chlorothalonil) in acetone:
   - animal exhibited 2-3 erythema @ 24hrs; 0.00 @ 48 hours.

NOTE: inconclusive results.
STUDY DESIGN FOR THE SENSITIZATION TESTING IN THE SECOND GUINEA PIG MAXIMIZATION STUDY WITH TECHNICAL CHLOROTHALONIL (TC)

Material Administered

<table>
<thead>
<tr>
<th></th>
<th>Test Group</th>
<th>Control Group</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Induction Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 0</strong></td>
<td>5M+5F</td>
<td>5M+5F</td>
<td></td>
</tr>
<tr>
<td>- six i.d. injections per animal:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.0% (v/v) TC in propylene glycol</td>
<td>propylene glycol</td>
<td>0.1 ml/site x 2 sites</td>
<td></td>
</tr>
<tr>
<td>+ 5.0% (v/v) TC in propylene glycol/ FCA (50:50)</td>
<td>propylene glycol/ FCA (50:50)</td>
<td>0.1 ml/site x 2 sites</td>
<td></td>
</tr>
<tr>
<td>- propylene glycol/ FCA (50:50)</td>
<td>propylene glycol/ FCA (50:50)</td>
<td>0.1 ml/site x 2 sites</td>
<td></td>
</tr>
<tr>
<td><strong>Day 7</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- one topical application per animal:</td>
<td>1.0% (v/v) TC in acetone</td>
<td>acetone</td>
<td>0.15 ml/site x 1 site</td>
</tr>
<tr>
<td><strong>Challenge Phase</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Day 21</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- two topical applications per animal:</td>
<td>0.0125% (v/v) TC in acetone</td>
<td>0.0125% (v/v) TC in acetone</td>
<td>0.075 ml/site x 1 site</td>
</tr>
<tr>
<td>+ acetone</td>
<td>acetone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FCA - Freund's Complete Adjuvant

UNQUOTE:

RESULTS

1) Acetone vehicle alone: mean score = 0.00 (induction)
2) mean scores (10 animals) Test          Control

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24</td>
<td>48</td>
<td>24</td>
</tr>
</tbody>
</table>

Mean scores: 1.25, 1.05, 0.40, 0.55

Conclusion: Chlorothalonil dissolved in acetone did not sensitize guinea pigs.
**Open Epicutaneous Sensitization Study using Technical Chlorothalonil.** The test protocol below is quoted from the testee's report.

### Study Design for the Open Epicutaneous Study with Technical Chlorothalonil (TC)

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of Guinea Pigs/Sex</th>
<th>Irritancy Testing</th>
<th>Sensitization Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4 M+4 F</td>
<td></td>
<td>acetone</td>
</tr>
<tr>
<td>Low Dose</td>
<td>4</td>
<td>0.075, 0.025, 0.075</td>
<td>0.01% TC in acetone (w/v)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.25, 0.75, 1.25%</td>
<td>TC in acetone (w/v)</td>
</tr>
<tr>
<td>Mid-Dose</td>
<td>4</td>
<td>0.075, 0.025, 0.075</td>
<td>0.1% TC in acetone (w/v)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.25, 0.75, 1.25%</td>
<td>TC in acetone (w/v)</td>
</tr>
<tr>
<td>High-Dose</td>
<td>4</td>
<td>0.075, 0.025, 0.075</td>
<td>1.0% TC in acetone (w/v)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.25, 0.75, 1.25%</td>
<td>TC in acetone (w/v)</td>
</tr>
</tbody>
</table>

---

*One application using a dose volume of 0.025 ml/site and a second application, 24 hours later, using a dose volume of 0.05 ml/site.*

*Twenty applications using a dose volume of 0.1 ml/site, administered on weekdays during a four-week period.*

*One application using a dose volume of 0.05 ml/site administered during the fifth week of the study.*

*Animals in this group were not exposed to chlorothalonil during the irritancy testing.*

**Results**

*Acetone Control*

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 hrs</td>
<td>0.43  0.06  1.5  0.18</td>
</tr>
<tr>
<td>48 hrs</td>
<td>0.25  0.62  0.31  0.18</td>
</tr>
</tbody>
</table>
Results - Open Epicutaneous Sensitization Study, using Technical Chlorothalonil

Mean values: Challenge Scores

5m ± 5F induced (at 24 hrs) Tech. Chlorothalonil (TC)

<table>
<thead>
<tr>
<th>TC challenge</th>
<th>0.025%</th>
<th>0.0075%</th>
<th>0.0025%</th>
<th>0.00075%</th>
<th>0.00025%</th>
<th>0.000025%</th>
</tr>
</thead>
<tbody>
<tr>
<td>induced 1.0% TC</td>
<td>1.5</td>
<td>0.31</td>
<td>0.25</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>24 hrs</td>
<td>0.1</td>
<td>1.5</td>
<td>0.68</td>
<td>0.12</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>48 hrs</td>
<td>0.01% TC</td>
<td>0.5</td>
<td>0.31</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TC challenge</th>
<th>1.0%</th>
<th>0.1%</th>
<th>1.0%</th>
<th>0.1%</th>
<th>0.01%</th>
</tr>
</thead>
<tbody>
<tr>
<td>induced 1.0% TC</td>
<td>1.8</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>48 hrs</td>
<td>0.01% TC</td>
<td>0.35</td>
<td>0.35</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TC challenge</th>
<th>1.0%</th>
<th>0.1%</th>
<th>1.0%</th>
<th>0.1%</th>
<th>0.01%</th>
</tr>
</thead>
<tbody>
<tr>
<td>induced 1.0% TC</td>
<td>0.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>72 hrs</td>
<td>0.01% TC</td>
<td>0.5</td>
<td>0.25</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Conclusions:

1) A Technical Chlorothalonil (in acetone) conc. at 0.01% did induce sensitization in guinea pigs (topically) elicited by T.C. in acetone conc. at 0.0025%.

2) A preliminary sensitization study using rabbits showed that "significant" sensitization was observed when the vehicle was acetone, less sensitization when petrolatum was used and virtually no sensitization was observed when phys. saline was used as the vehicle.

3) Why did the tester not see physiological action for the main sensitization study? (Core minimum)
<table>
<thead>
<tr>
<th>Study/Lab/Study #/Date</th>
<th>Material</th>
<th>EPA Accession No.</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal sensitization, guinea pig. FDRL # 7620 4-15-82</td>
<td>97% Technical Chlorothalonil</td>
<td>144112-60-0</td>
<td>Technical Chlorothalonil did not sensitize guinea pig.</td>
</tr>
<tr>
<td>Dermal sensitization guinea pig. U. of Texas Dept of Dermatology #1044-86-0034-TX-001 1-6-88</td>
<td>Technical Chlorothalonil</td>
<td>405-462-001</td>
<td>T. chlorothalonil did weakly sensitize guinea pig only when dissolved in aceton. (A preliminary study showed &quot;significant irritation&quot; when T.C. dissolved in aceton, but no irritation when dissolved in saline. Textor used aceton, T.C. dilution for main study) should have used saline.</td>
</tr>
</tbody>
</table>
The material not included contains the following type of information:

- Identity of product inert ingredients.
- Identity of product impurities.
- Description of the product manufacturing process.
- Description of quality control procedures.
- Identity of the source of product ingredients.
- Sales or other commercial/financial information.
- A draft product label.
- The product confidential statement of formula.
- Information about a pending registration action.
- FIFRA registration data.
- The document is a duplicate of page(s) ________.
- The document is not responsive to the request.

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.
<table>
<thead>
<tr>
<th>Study/Lab/Study 8/Date</th>
<th>Material</th>
<th>EPA Accession No.</th>
<th>Results:</th>
<th>Toxic. Grade/Doc. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin irritation, Rabbit Bio/Dynamics #4503.77</td>
<td>Bravo 500</td>
<td>87068</td>
<td>P.I. Irrit. 1.3 72hr 10. irritation score = 0.42</td>
<td>IV Guidelines</td>
</tr>
<tr>
<td>Dermal sensitization, guinea pigs; #FDRL #7020 4-15-82</td>
<td>Technical chlorothalonil 97% A.I.</td>
<td>144112</td>
<td>T.C. did not sensitize guinea pigs</td>
<td>- Guidelines</td>
</tr>
<tr>
<td>Dermal sensitization, guinea pigs; #SD-2787 6-27-86</td>
<td>Bravo 720 547 A.I.</td>
<td>405460-02</td>
<td>Modified Buehle closed patch - repeat insult challenge Bravo 720 24 hrs control 0.66 0.38 rechallenge 0.54 0.17 did sensitize (very weak)</td>
<td>- Guidelines</td>
</tr>
<tr>
<td>Dermal sensitization, guinea pigs; U. of Texas Dept. of Dermatology #1094-86-0034-TX-001 1-6-88</td>
<td>Technical chlorothalonil</td>
<td>405460-01</td>
<td>T.C. did not sensitize 9.8%; when dissolved in acetone (preliminary study showed C significant irritation when T.C. dissolved in acetone) virtually no irritation when dissolved in phys. saline?) did not main study use</td>
<td>Cota minimum</td>
</tr>
<tr>
<td>Study/Lab/Study #/Date</td>
<td>Material</td>
<td>EPA Accession No.</td>
<td>Results:</td>
<td></td>
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</tr>
<tr>
<td>Acute eye irritation, Monkey, Bio/Dynamics #6436-80, 4-17-87</td>
<td>Bravo 500</td>
<td>87177</td>
<td>Corneal opacity through day 14, absent day 21. Irritation absent day 14</td>
<td></td>
</tr>
<tr>
<td>Acute eye irritation, Rabbit, Bio/Dynamics #6504-80, 4-17-87</td>
<td>Bravo 500</td>
<td>87177</td>
<td>No iris involvement. Corneal involvement absent by day 4. Conjunctival irritation absent by day 7.</td>
<td></td>
</tr>
<tr>
<td>Acute eye irritation, Rabbit, Bio/Dynamics #4513-77, 9-19-77</td>
<td>Bravo 500</td>
<td>87178</td>
<td>No iris involvement; corneal involvement absent by day 7, present at day 21.</td>
<td></td>
</tr>
<tr>
<td>Acute eye irritation, Rabbit, Wil Res Lab. #Wil-11086, 1-30-86</td>
<td>Bravo 720</td>
<td>158493</td>
<td>Corneal involvement absent by day 4. Irritation present through day 10, absent by day 21.</td>
<td></td>
</tr>
<tr>
<td>Study/Lab/Study 0/Date</td>
<td>Material</td>
<td>EPA Accession No.</td>
<td>LD50, LC50, PIS, NOEL, LEL</td>
<td>TOX, CORE Grade/Doc. No.</td>
</tr>
<tr>
<td>------------------------</td>
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</tr>
<tr>
<td>acute oral LD50, Rat. Bio/Dynamics &amp; 4501-77 10-19-77</td>
<td>Bravo 500</td>
<td>87306</td>
<td>LD50 4.29/kg (2.9-6.1) g/kg</td>
<td>111 guidelines</td>
</tr>
<tr>
<td>acute dermal LD50, Rabbit, SDS/Biotech. 50S-2787 2-7-86</td>
<td>Bravo 720</td>
<td>1582494</td>
<td>LD50 &gt; 2000 mg/kg</td>
<td>111 guidelines</td>
</tr>
<tr>
<td>acute dermal LD50, Rabbit, Bio/Dynamics # 4502-77 10-24-77</td>
<td>Bravo 600</td>
<td>87307</td>
<td>LD50 &gt; 20.0 g/kg</td>
<td>114 guidelines</td>
</tr>
<tr>
<td>Acute Inhalation LC50 Rat. Bio/Dynamics # 77-1946 12-6-1977</td>
<td>Bravo 500</td>
<td>87310</td>
<td>LC50 &gt; 1.072 mg/L</td>
<td>- Supplementary</td>
</tr>
<tr>
<td></td>
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<td>No particle size distribution, no mixed, GSD.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Acute of cloud concentration questionable.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Respirable particle fraction calculated/estimated</td>
<td></td>
</tr>
</tbody>
</table>