Date: February 11, 1981

Subject: EPA File Symbol: 7969-11
IADDOK: Caswell # 502 C 63

From: Deloris F. Graham
FIB/TESS

To: Robert Taylor
Product Manager (25)

Applicant: BASF Wyandotte Corporation
Agricultural Chemical Division
100 Cherry Hill Road
Parsippany, New Jersey

Active Ingredients:

Sodium salt of bentazon (3-Isopropyl-1H-2,1),
3-benzothiadiazin-4(3H)-one,2,2-dioxide...............21.8%
Atrazine (2-chloro-4-ethylamino-6-isopropylamino-
s-triazine..................20.0%
Inert Ingredients..................58.2%

Background: Submitted Acute Oral, Acute Dermal, Acute Inhalation, Eye Irritation and Skin Irritation studies. These studies were conducted by BASF. These data are under accession number 244920. Method of support not indicated.

Recommendations:

(1) FAB/TESS finds these studies acceptable to support the conditional registration of this product. However, for future submissions please note:

a. In the Acute Oral Study, LD50 and 95% confidence limits must be submitted individually for males and females.

b. In the Acute Dermal Study, irritation scores must be reported individually for each animal.

c. In the Acute Inhalation Study, chamber temperature and humidity must be reported.
d. In the Eye Irritation Study, 9 animals (6 animals with treated unwashed eyes and 3 animals with treated washed eyes) must be used.

e. In the Dermal Irritation Study, 4 skin sites (2 abraded and 2 intact) must be used.

3. As determined by the Eye Irritation Study, the appropriate signal word is DANGER.

Label:
1. The signal word DANGER must appear on center front panel.
2. The preferred placement of the statement "Keep Out of Reach of Children" is on the center front panel preceding the signal word.
3. The precautionary statements must be revised to read:
   "Corrosive, causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if swallowed."
   "If in Eyes, immediately flush eyes with plenty of water. Get medical attention. If on Skin, immediately flush skin with plenty of water. Get medical attention if irritation persists."
4. The statement "Keep out of lakes, ponds or streams" must be revised to read "Do not apply directly to lakes, ponds or streams."
5. The Environmental Hazard statements preceding the Storage and Disposal statements must be deleted.
6. Please see enclosed copy of labeling procedures and formats.

Review:

   Procedure: 6 groups, each consisting of 5M and 5F Sprague-Dawley rats received one of the following doses: 1000, 1470, 2150, 3160, 3830 and 5000 mg/kg of the test material. Observations were made daily for 14 days. Necropsies were performed on all animals.
Results: At 3160 mg/kg, 3/10 animals died; at 3830 mg/kg, 9/10 animals died and at 5000 mg/kg, 10/10 animals died. Symptoms observed included dyspnea, apathy, abnormal position, staggering, trembling, twitching, spastic gait, piloerection, erythema, cyanosis, exsanguisosis, salivation, lacrimation, poor general condition. Necropsy of animals which died during study revealed acute dilatation of the atra; acute congestive hyperemia of the heart; clay-colored periphery involving about half of the area of the acinus of the liver; hemorrhagic ulcerations in the glandular stomach, content mixed with blood in intestines. Sacrificed animals showed no abnormalities at necropsy. LD50 for males and females was 3341 mg/kg with confidence limits between 2959-3639 mg/kg.

Study Classification: Core Minimum Data. Must submit LD50 and confidence limits individually for males and females.

Toxicity Category: III - CAUTION


Procedure: 2 groups, each consisting of 5M and 5F Sprague-Dawley rats received one of the following doses: 2000 and 5000 mg/kg at shaved skin sites. The treated skin sites were placed under occlusive wrap for a 24-hour exposure period. Observations were made at 1, 24 and 48 hours and 7 and 14 days. Necropsies were performed on all animals.

Results: No mortalities. Symptoms observed included irregular respiration and apathy. At 24 hours after exposure there were signs of primary irritation which had completely subsided after 7 days. No abnormalities observed at necropsy. LD50 was greater than 5000 mg/kg.

Study Classification: Core Minimum Data Irritation scores must be reported individually for each animal.

Toxicity Category: III-CAUTION

3. Acute Inhalation Toxicity: BASF; February 2, 1980;

Procedure: The vessel containing the test substance was connected to a two-component or a Rhema atomizer, which was additionally supplied with filtered compressed air. When the Pari nebulizer was used, the condensate from the walls was collected and led back into the inhalation system. The nominal concentration was determined gravimetrically. A pressure slightly above atmosphere pressure was maintained in the inhalation system by means of an exhaust air system. The animals were exposed for 6 hours.
Ten male and ten female Sprague-Dawley rats were used for each of the following exposure concentrations: 25.6, 29.5 and 12 mg/l nominal concentrations. The analytical concentrations were 6.09, 3.12 and 1.68 mg/l respectively.

Results: At 25.6 mg/l, 1/10 M died and at 29.5 mg/l, 1/10 F died. Symptoms observed included lid closure, reddened nose, head conglutinated by substance, ruffled fur, dyspnea, tremors, staggering gait with stretched legs, crouching posture, aggressiveness, alopecia. Necropsy revealed reddish brown liver; yellowish-brown marbleization of liver; clay-colored periphery involving about half of the area of the acinus of the liver. The IC50 was determined to be greater than 6.1 mg/l.

Study Classification: Core Minimum Data. Chamber temperature and relative humidity must be reported.

Toxicity Category: III - CAUTION


Procedure: 6F white rabbits received a 0.1 ml dose of the test material in one eye. Observations were made at 24, 48 and 72 hours and 8 and 16 days.

Results: At 24 hours, 6/6 animals had corneal opacity (6/6 = 20); 1/6 iris irritation (1/6 = 5); 6/6 conjunctive redness (6/6 = 2); swelling (6/6 = 2) and discharge (6/6 = 2). Corneal opacity and conjunctive irritation persisted for 16 days.

Study Classification: Core Minimum Data.

Toxicity Category: I - DANGER


Procedure: 3M and 3F rabbits were exposed to a 0.5 ml dose of the test material at intact and abraded skin sites under occlusive wrap for a 24 hour exposure period.

Results: At 24 hours, well defined erythema and edema at abraded and intact skin sites on all animals. At day 8, slight erythema and severe eschar formation. Primary irritation index was 3.8.

Study Classification: Core Minimum Data. 4 skin sites (2 abraded and 2 intact) must be used.

Toxicity Category: III - CAUTION
Laddok™

STEMERGENCE FLOWABLE HERBICIDE

Active Ingredients:
- Sodium salt of bentazon* (3-Isopropyl-1H-2,1,4-benzothiadiazin-4(3H)-one, 2,2-dioxide) 21.8%
- Atrazine*(2-chloro-4-ethylamino-6-isopropylamino-s-triazine) 20.0%

Inert Ingredients.......................... 5.2%
Equivalent to 1.66 pounds per gallon each active ingredient.

REGISTRATION NO. 7969-

ADDITIONAL INFORMATION

Keep out of reach of children. Avoid contact with eyes or skin. In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

ENVIRONMENTAL HAZARDS

Do not contaminate water by cleaning of equipment or disposal of wastes.

SAFE USE

HE WILL BEFORE USING

CONTENTS

2 Gallons

SF Wyandotte Corp., Parsippany, N.J. 07054
Applying of Applications

 Alfalfa - Post-emergence when weeds are at 2" to 4" tall and actively growing and before weeds reach 6" to 8" tall. 

AERIAL APPLICATION - Special Directions

To obtain uniform coverage and avoid drift hazards, the discharge should be directed toward the end of the crop and the direction of travel. Use only diaphragm-type nozzles producing cone or fan spray patterns.

Aerial Application - Special Conditions

Ground equipment: Use a minimum of 5 gals of water per acre and a maximum of 40 psi pressure. Use only standard hollow cone or flat fan nozzles spaced 20 inches apart. Do not use flat nozzles.

Air equipment: Use a minimum of 5 gals of water per acre and a maximum of 40 psi pressure. Use only diaphragm-type nozzles producing cone or fan spray patterns.

Always apply according to the manufacturer's recommendations.

Nozzle orientation: Nozzles must be oriented so as to discharge straight-back and straight-down.

Nozzle height: Maximum of 10 feet above crop.

Nozzle placement: Nozzles must not be located further out than three-fourths of the distance from the center of the aircraft to the end of the wing or rotor.

Water volume and spray pressure: See above.

Volume and spray pressure: See above.

Water volume and spray pressure: See above.

Wind and spray pressure: See above.

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Wind and spray pressure: See above.
Environmental Hazards
Keep out of lakes, streams, or ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

Do not apply when weather conditions favor drift from target area.

Storage And Disposal
Do not allow product to freeze.

Do not contaminate water, food or feed by storage or disposal. Open dumping prohibited. Do not reuse empty container.

Pesticide, spray mixture or rinsate that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticides or buried in a safe place away from water supplies.

Triple rinse container and dispose of in an incinerator or landfill approved for pesticide containers, or bury in a safe place.

Consult federal, state or local disposal authorities for approved alternative procedures such as limited open burning.

Conditions of Sale And Warranty
The Directions for Use of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF WYANDOTTE CORPORATION ("BWC") or the Seller. All such risks shall be assumed by the Buyer.

BWC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use, subject to the inherent risks referred to above. BWC MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. In no case shall BWC or the Seller be liable for consequential, special or indirect damages resulting from the use or handling of this product. BWC and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing Conditions of Sale and Warranty which may be varied only by agreement in writing signed by a duly authorized representative of BWC.
Laddok is sensitive to wind, so use materials that provide adequate wind protection. Do not apply during or immediately after a heavy rain. Ensure proper drift control devices and extension boom are being used to prevent drift, and do not use until 12 hours after the last application of a non-phytotoxic herbicide to be applied with Laddok. Do not apply Laddok if crop injury (leaf phytotoxicity or plant stunting) produced by any other prior herbicide applications, because this injury may be enhanced and or prolonged.

Do not apply Laddok during prolonged periods of drought or during unseasonably cold weather, as unsatisfactory weed control may result. Rainfall or overhead irrigation soon after application (within 8 hours) may nullify the effectiveness of Laddok.

Do not mix or apply Laddok with any other pesticide or with fertilizer except as specifically recommended on this labeling.

Application Rate Table for Corn

<table>
<thead>
<tr>
<th>Weeds Controlled</th>
<th>Application Rates for Weed Growth Stages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Last Stage</td>
</tr>
<tr>
<td>Cocklebur (Xanthium pensylvanicum)</td>
<td>2-6&quot;</td>
</tr>
<tr>
<td>Common Lambsquarters (Chenopodium album)</td>
<td>4-8</td>
</tr>
<tr>
<td>Common Ragweed (Ambrosia artemisiifolia)</td>
<td>up to 4</td>
</tr>
<tr>
<td>Giant Ragweed (Ambrosia trifida)</td>
<td>up to 4</td>
</tr>
<tr>
<td>Jimsonweed (Datura stramonium)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Ladythyst (Polygonum persicaria)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Penna. Smartweed (Polygonum pensylvanicum)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Radish Pigweed (Amaranthus retroflexus)</td>
<td>4-8</td>
</tr>
<tr>
<td>Velvetleaf (Abutilon theophrasti)</td>
<td>up to 4</td>
</tr>
<tr>
<td>Venice Mallow (Hibiscus trionum)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Wild Buckwheat (Polygonum convolvulus)</td>
<td>up to 4</td>
</tr>
<tr>
<td>Wild Mustard (Brassica kaber)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Wild Sunflower (Helianthus annuus)</td>
<td>up to 4</td>
</tr>
<tr>
<td>Beggarticks (Bidens frondosa)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Bristly Starbird (Amaranthus hybridus)</td>
<td>up to 4</td>
</tr>
<tr>
<td>Dayflower (Commelina sp.)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Prickly Sida or Teaweed (Sida spinosa)</td>
<td>up to 6</td>
</tr>
<tr>
<td>Spurred Anoda (Anoda crassifolia)</td>
<td>up to 6</td>
</tr>
</tbody>
</table>

Areas: In irrigated areas, it may be necessary to allow for Laddok treatment to ensure weeds are not controlled. Weeds growing under drought conditions are not satisfactorily controlled.

For the control of:
- Annual Morningglories (Ipomoea spp. and Jacquemontia tamnifolia), Canada Thistle (Cirsium arvense),
- Yellow Nutsedge (Cyperus esculentus)

Refer to Basagran® Herbicide Label.