



PH22 42545-53 127/4  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (H7505C)  
401 "M" St., S.W.  
Washington, D.C. 20460

EPA Reg.  
Number:

42545-53

Date of Issuance:

MAY 23 1993

Term of Issuance:

Conditional Expires  
June 30, 1994

Name of Pesticide Product:

Tough 45 WP

NOTICE OF PESTICIDE:

☒ Registration  
☐ Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Agrolinz, Inc.  
6525 Quail Hollow, Suite 107  
Memphis, TN 38120-4422

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(C) provided that you:

1. Add the phrase "EPA Registration No. 42545-53" to your labeling prior to releasing your product for shipment.
2. Under Environmental Hazards, delete the third sentence and replace it with "Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark."
3. You must submit a new anaerobic soil metabolism study, conducted in accordance with GRN 162-2. These data must be received by the Agency by April 30, 1993.
4. Submit five (5) copies of your revised final printed label for the record.

Signature of Approving Official:

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Date:

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EPA Reg. No. 42545-53

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy is enclosed for your records.

Sincerely,

Cynthia Giles-Parker  
Product Manager (22)  
Fungicide-Herbicide Branch  
Registration Division (H7505C)

Enclosure

4402 42545-53

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Under the Federal Insecticide  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

AGROLINZ, INC.

TOUGH 45 WP

42545-53

FOR THE POST-EMERGENCE CONTROL OF ANNUAL WEEDS  
IN CABBAGE AND CORN

ACTIVE INGREDIENT:

Pyridate\*.....45%

INERT

INGREDIENTS:.....55%

Total 100%

\*O-(6-chloro-3-phenyl-4-pyridazinyl, -S-octyl-carbonothioate  
Contains 0.45 lbs. of pyridate per pound of product.

KEEP OUT OF REACH OF CHILDREN  
CAUTION

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician or poison control center. Drink  
1 or 2 glasses of water and induce vomiting by touching back of  
throat with finger. Do not induce vomiting or give anything by  
mouth to an unconscious person.

IF ON SKIN: Wash with plenty of soap and water. Do not reuse  
contaminated clothing until washed. Get medical attention if  
irritation persists.

IF IN EYES: Flush with plenty of water for 10-15 minutes. Get  
medical attention.

AGROLINZ, INC.

EPA Est. No.  
33562-AT-02  
42545-MO-1

1669 Kirby Parkway, Suite 100  
Memphis, TN 38120

EPA Reg. No.  
42545-LG

Net Contents 2 lbs. / 0.9 kilos

PRECAUTIONARY STATEMENTS

SEE OTHER PANELS FOR ADDITIONAL PRECAUTIONARY STATEMENTS

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# CAUTION

## HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Harmful if swallowed. Avoid breathing spray mist. Avoid contact with eyes, skin, or clothing. In case of contact immediately flush eyes or skin with plenty of water. Product may cause skin sensitization in some individuals. Get medical attention if irritation persists. If swallowed, contact your local poison control center, hospital, or physician. If the patient is conscious and alert, induce vomiting (syrup of ipecac or stimulate the back of throat with a finger). NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

**NOTE TO PHYSICIAN:** There is no specific antidote. If this product is ingested, induce emesis or lavage stomach. The use of an aqueous slurry of activated charcoal may be considered.

## ENVIRONMENTAL HAZARDS

Do not contaminate water intended for irrigation or domestic purposes. Runoff may adversely affect nontarget plants. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water when disposing of equipment washwater or rinsate. This product is toxic to estuarine organisms.

## AGRICULTURAL CHEMICAL

DO NOT SHIP OR STORE WITH FOODS, FEEDS, DRUGS, OR CLOTHING.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with this labeling.

## RE-ENTRY STATEMENT:

Do not enter treated areas without protective clothing until sprays have dried. Protective clothing should include: hat or other suitable head covering, long sleeved shirt and long legged trousers, or a coverall type garment, shoes and socks.

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Because certain states may require more restrictive re-entry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. The front panel PRECAUTIONARY STATEMENTS should be read to workers as well as the instruction not to enter until sprays have dried. When oral warnings are given, warnings shall be given in a language customarily understood by the workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers.

#### STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or by disposal.

**Storage:** Store unused product in original container only in freeze-free, dry area out of reach of children and animals. Keep storage locked.

**Pesticide Disposal:** Wastes resulting from the use of this product may be disposed on site or at an approved disposal facility.

**Container Disposal:** TOUGH 45WP is sold in an aluminum bag containing 2 one-pound water soluble bags. The aluminum bag overwrap does not come into contact with the product and may be disposed in a sanitary landfill, buried on site, or if allowed by state and local authorities, burned. If burned, stay out of smoke.

#### GENERAL INFORMATION

TOUGH 45WP is a contact post-emergence herbicide to be used alone or in combinations with other herbicides for the selective control of certain annual broadleaf weeds, sedges and grassy weeds in field corn and cabbage.

TOUGH 45WP is rapidly absorbed by leaves. It penetrates into both sensitive and tolerant plants, but is quickly metabolized and inactivated in tolerant crops such as corn and cabbage. In sensitive weeds, activity is evident by marginal yellowing followed by yellowing and browning of the entire leaf. This visible evidence generally occurs within 4-7 days of application. Activity is more rapid at higher temperature and under good growing conditions. Weed control under drought conditions may be decreased.

Uptake of TOUGH 45WP by leaves is very rapid and rainfall shortly after application (1-2 hours) has little effect on the degree of weed control.

TOUGH 45WP rapidly decomposes in the soil and has no effective pre-emergence or residual activity.

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**TOUGH 45WP** is noncorrosive to equipment, nonflammable and nonvolatile.

Do not combine **TOUGH 45WP** with other pesticides except as specifically directed on this label.

**Mixing Instructions:** Fill the spray tank with approximately one-half the amount of water to be used in spraying. With agitation, add the correct amount of **TOUGH 45WP**.

For tank mix combinations, the order of addition of other products is important. Wettable powders or dry flowables should be added after the **TOUGH 45WP**, aqueous flowables next, and then any emulsifiable liquids.

After all products have been added, finish filling the spray tank with the remainder of the water to be used for spraying.

**NOTE:** Agitation must occur during mixing and spraying to ensure a uniform spray mixture. Continue agitating during application until spray tank is empty. Spray mixture should be used immediately and not stored.

**Application - Procedures** - Apply **TOUGH 45WP** treatments with a boom sprayer properly calibrated at constant speed and delivery. Application should be made using a minimum of 20 - 30 gallons of water per acre at 30-40 psi. Thorough coverage of weeds is essential for best results. Large crop and weed-leaf canopies may shelter smaller weeds and prevent adequate coverage.

**Timing:** **TOUGH 45WP** is most effective on actively growing weeds in the 2-4 true leaf stage.

A delay in spraying which permits weeds to grow beyond the proper application time may result in poor control. If weeds are under stress and not actively growing, they are harder to kill. Scout your fields 14-16 days after planting to determine exact timing for application. In corn, a cultivation may be necessary if all weeds are not controlled or if weeds regrow.

Do not apply when conditions favor drift which can carry spray to adjacent sensitive non-target areas.

#### **USE DIRECTIONS**

Refer to the WEED CHART for specific weed information.

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### USE ON CABBAGE

Cabbage is more tolerant to TOUGH 45WP at certain stages of development. For optimum weed control and minimal competition to the crop, timing of application must be based on the stage of weed growth.

In seeded cabbage, TOUGH 45WP should be applied only when the crop has at least 3 leaves fully developed and before head formation.

In transplanted cabbage, TOUGH 45WP should be applied only after plants have become well established (about 14 days after transplanting) and before head formation.

For optimum broad spectrum weed control, TOUGH 45WP may be used as part of a sequential treatment to control broadleaf weeds following a preplant incorporated or pre-emergence herbicide.

For control of annual broadleaf weeds including triazine resistant types and annual grasses, use the following treatment:

Apply trifluralin at recommended rates (see trifluralin label) pre-planting and incorporate, then follow with a post-emergence application of TOUGH 45 WP at 2 lbs./acre to actively growing weeds. Apply Tough 45WP to broadleaf weeds in 2-4 leaf stage and annual grasses in 1-2 leaf stage in 20-30 gallons of water per acre. Thorough coverage of targeted weeds is essential.

Do not apply TOUGH 45 WP to cabbage within 45 days of harvest.

**CAUTION:** TOUGH 45WP may cause temporary discoloring or yellowing of leaves that were sprayed. Only leaves that come in contact with spray will be affected. The discoloring of leaves does not affect yields.

### RESTRICTIONS

Do not feed treated cabbage to livestock within 45 days of application of TOUGH 45 WP.

### USE ON FIELD CORN

Field Corn is tolerant to TOUGH 45WP at all stages of development. However, for optimum weed control and minimal competition to the crop, timing of application must be based on the stage of weed growth.

Do not apply TOUGH 45WP to corn within 68 days of harvest.

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### **RESTRICTIONS**

Do not graze or otherwise feed treated corn grain, forage, or fodder to livestock within 68 days of application of TOUGH 45 WP.

#### **Option 1: TOUGH 45WP Plus Atrazine - In Tank Mix Combination Against Annual Broadleaf Weeds Including Triazine Resistant Weeds**

For the control of annual broadleaf weeds up to the 4 leaf stage. Combine 1 lb. of TOUGH 45WP with 0.75 lbs. of atrazine 80WP (or the equivalent 90 DF or 4 L) per acre for early post-emergence application.

This combination is to be applied in a sequential treatment with a pre-emergence grass herbicide or in fields without grass infestation. Grasses up to the 3 leaf stage, escaping from pre-emergence treatment, are suppressed with this TOUGH-atrazine combination.

#### **Option 2: TOUGH 45WP Plus Atrazine - In Tank Mix Combination Broadpectrum Post-emergence Treatment Including Triazine Resistant Weeds**

For broadpectrum weed control, combine 2 lbs. of TOUGH 45WP with 1.25-2 lbs. of Atrazine 80WP (or the equivalent 90 DF or 4 L) per acre.

Time application when susceptible grass species are in the 1-3 leaf stage. For best control of most broadleaf species, apply when they are in the 2-4 leaf stage. Use the higher rate of atrazine for most consistent grass control. Avoid fields with problem grasses which atrazine does not control or include a grass herbicide in the control program. Get further instructions from the weed chart. Read atrazine label for additional instructions and restrictions.

#### **Option 3: TOUGH 45WP Plus Cyanazine (Bladex) - In Tank Mix Combination Broadpectrum Post-emergence Treatment Including Triazine Resistant Weeds (for use in Northeast and Central States only)**

For broadpectrum weed control where atrazine residue carry-over may be a problem, combine 2 lbs. of TOUGH 45WP with 1.25 - 2 lbs. of Bladex 80WP (or the equivalent DF).

Apply when the susceptible grasses are in the 1-3 leaf stage. For best control of broadleaf weeds, spray when they are in the 2-4 leaf stage. Use the higher rate of Bladex for most consistent grass control. Get further instructions from the weed chart.

#### **Precautions for TOUGH 45WP plus Bladex (80WP or DF)**

DO NOT apply if the fifth leaf of corn is visible.

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DO NOT use the Bladex flowable formulation.  
 DO NOT apply during cool wet conditions or when corn is  
 under stress.  
 DO NOT use on sandy soils with less than 1% O.M.  
 Read the Bladex label.

**Option 4: TOUGH 45WP Alone**  
**Broadleaf Weeds Including Triazine Resistant Biotypes**

For the control of broadleaf weeds including triazine resistant biotypes, apply 2 lbs. of TOUGH 45WP when the weeds are in the 2-4 leaf stage.

TOUGH 45WP alone may be used as part of a sequential treatment to control escaping broadleaf weeds, following a preplant incorporated or pre-emergence grass herbicide.

**SPECIAL USE DIRECTIONS**

**Yellow and purple nutsedge (C. esculentus, Cyperus rotundus.):**

Yellow and purple nutsedge are suppressed significantly with TOUGH 45WP. Apply 2 lbs./acre TOUGH 45WP when the sedges are 6-8 inches high. TOUGH will burn back the top growth of nutsedge. Regrowth may occur. TOUGH 45WP alone or TOUGH 45WP plus atrazine can be applied at any stage of the crop growth.

**Grasses:**

TOUGH 45WP at a rate of 2 lbs./acre plus atrazine will control moderate infestations of escaped grasses following a pre-plant incorporated or pre-emergence grass herbicide.

TOUGH 45WP at rate of 2 lbs./acre plus atrazine or cyanazine (Bladex\*) will control susceptible grasses up to the 3 leaf stage.

Early timing is the key for good broadleaf weed and grass control. Delay in timing may result in reduced control. A timely cultivation 10-14 days after an application may aid in control.

\*Bladex is a registered trademark of Du Pont Inc.

**WARRANTY LIMITATIONS AND DISCLAIMER**

Agrolinz, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the Directions For Use when used under normal conditions. **THIS IS THE ONLY WARRANTY MADE ON THIS PRODUCT. NO OTHER EXPRESS AND NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE OUTSIDE OF THIS LABEL.** Therefore, neither this warranty nor any other warranty of merchantability or fitness for

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a particular purpose, express or implied, extends to the use of this product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), under abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes, etc.) or under conditions not reasonably foreseeable to or beyond the control of seller.

When buyer or user suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), buyer or user must promptly notify in writing Agrolinz, Inc. of any claims to be eligible to receive either remedy given below. The EXCLUSIVE REMEDY OF THE BUYER OR USER and the LIMIT OF LIABILITY of Agrolinz, Inc. or any other seller will be one of the following, at the election of Agrolinz, Inc.:

1. Refund of purchase price paid by buyer or user for product bought or
2. Replacement of amount of product used.

The seller will not be liable for consequential or incidental damages or losses.

The terms of this Warranty Limitations and Disclaimer cannot be varied by any written or verbal statements or agreements. Any employee or sales agent of the seller is not authorized to vary or exceed the terms of this Warranty Limitations and Disclaimer in any manner.

AGROLINZ, INC.  
1669 KIRBY PARKWAY, SUITE 100  
MEMPHIS, TN 38120  
USA

WEED CHART FOR USE OF TOUGH 45 WP

<u>WEED</u>	<u>COMMON NAME</u>	<u>OPTION 1</u> 1 lb. TOUGH 45 WP + 0.75 lbs. of atrazine 80 WP	<u>OPTION 2</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of atrazine 80 WP	<u>OPTION 3</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of Bladex 80 WP	<u>OPTION 4</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of Bladex 80 WP
Amaranth, palmer spiny	A. palmeri A. spinosus	X X	X X	X X	X X
Anoda, spurred	Anoda cristata	X	X	X	
Artichoke, Jerusalem	Helianthus tuberosus		XS	XS	
Bedstraw, catchweed	Galium aparine	X	X	X	
Bindweed, field	Convolvulus arvensis	XS	XS	XS	
Buckwheat, wild	Polygonum convolvulus		X	X	
Carpetweed	Mollugo verticillata	X	X	X	
Chickweed, Common	Stellaria media	X	X	X	
Cocklebur, common	Xanthium strumarium	X	X	X	
Corn chamomile	Anthemis arvensis	X	X	X	
Corn spurry	Spergula arvensis	X	X	X	
Dead nettle, purple spotted	Lamium purpureum Lamium maculatum	X X	X X	X X	X X
Galinsoga, hairy small flower	Galinsoga ciliata Galinsoga parviflora	X X	X X	X X	X X
Henbit	Lamium amplexicaule	X	X	X	
Jimsonweed	Datura stramonium	X	X	X	

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WEED CHART FOR USE OF TOUGH 45 WP

<u>WEED</u>	<u>COMMON NAME</u>	<u>OPTION 1</u> 1 lb. TOUGH 45 WP + 0.75 lbs. of atrazine 80 WP	<u>OPTION 2</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of atrazine 80 WP	<u>OPTION 3</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of Bladex 80 WP	<u>OPTION 4</u> 2 lbs. TOUGH 45 WP	<u>CABBAGE</u> 2 lbs. TOUGH WP Following a preplant & incorporate grass herbicide
Kochia	Kochia scoparia	X	X	X	X	X
Knotweed, prostrate	Polygonum aviculare		X	X		
Lady's thumb	Polygonum persicaria		X	X		
Lambsquarters, common	Chenopodium album	X	X	X	X	X
Mayweed chamomile	Anthemis cotula	X	X	X	X	X
Morningglory entireleaf	Ipomea hederacea var integriuscula		X	X		
ivyleaf	Ipomea hederacea	X	X	X		
pitted	Ipomea lacunosa	XS	X	X	XS	
red	Ipomea coccinea	XS	X	X	X	
smallflower	Jacquemontia tamnifolia	XS	X	X	X	X
tall	Ipomea purpurea		X	X		
Mustard white	Sinapsis alba	X	X			X
wild	Sinapsis arvensis	X	X	X		X
Nighthshade, American black	Solanum americanum	X	X	X	X	X
black	Solanum nigrum	X	X	X	X	X
eastern black	Solanum ptycanthum	X	X	X	X	X
purple	Solanum xanthifolium	X	X	X	X	X
silverleaf	Solanum elaeagnifolium	X	X	X	X	X
Pigweed, fringed	Amaranthus fimbriatus	X	X	X	X	X
prostrate	Amaranthus blitoides	X	X	X	X	X

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WEED CHART FOR USE OF TOUGH 45 WP

<u>WEED</u>	<u>COMMON NAME</u>	<u>OPTION 1</u> 1 lb. TOUGH 45 WP + 0.75 lbs. of atrazine 80 WP	<u>OPTION 2</u> 2 lbs. TOUGH . 45 WP + 1.25-2 lbs. of atrazine 80 WP	<u>OPTION 3</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of Bladex 80 WP	<u>OPTION 4</u> 2 lbs. TOUGH 45 WP	<u>CABBAGE</u> 2 lbs. TOUGH WP Following a preplant & incorporate grass herbicide
Pigweed, con't redroot	Amaranthus retro- flexus	X	X	X	X	X
smooth	Amaranthus hibridus	X	X	X	X	X
tumble	Amaranthus albus	X	X	X	X	X
Prickly Sida	Sida spinosa	X	X	X		
Ragweed, common	Ambrosia artemisi- folia	XS	X	X	XS	XS
giant	Ambrosia trifida	XS	X	X	XS	XS
Shepherdspurse	Capsella bursa- pastoris	X	X	X	X	X
Sicklepod	Cassia obtusifolia		X	X	XS	
Smartweed, Pennsylvania	Polygonum pensylvanicum	X	X	X	XS	
Thistle, Canada	Cirsium arvense		XS	XS		
Velvetleaf	Abutilon theophrasti	X	X	X	X	X
Yellow rocket	Barbarea vulgaris	X	X	X	X	X

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<u>WEED</u>	<u>COMMON NAME</u>	<u>OPTION 1</u> 1 lb. TOUGH 45 WP + 0.75 lbs. of atrazine 80 WP	<u>OPTION 2</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of atrazine 80 WP	<u>OPTION 3</u> 2 lbs. TOUGH 45 WP + 1.25-2 lbs. of Bladex 80 WP	<u>OPTION 4</u> 2 lbs. TOUGH 45 WP	<u>CABBAGE</u> 2 lbs. TOUGH WP Following a preplant & incorporate grass herbicide
<u>Grasses</u>						
Barnyard grass	Echinochloa crus- galli	XE	X	X	XE	XE
Crabgrass, large	Digitaria sanguinalis	XS	XS	X	XE	XE
smooth	Digitaria ischaemum	XS	X	X		
Foxtail, giant	Setaria faberi	XS	X	X		
giant green	Setaria viridis var. major	XS	X	X	XS	
green	Setaria viridis	XE	X	X	XS	
yellow	Setaria glauca	XE	X	X	XS	XS
Panicum, fall	Panicum dichotomi- florum			X		
Panicum, Texas	Panicum texanum		X	X		
Witchgrass	Panicum capillare			X		

XE - Control of escaped grasses up to the 3 leaf stage

XS - Suppression

X - Controlled