

**PESTICIDE** 

**CONTROL OFFICE** 

Community
Applicator
Certification
Training

# GILA RIVER INDIAN COMMUNITY DEPARTMENT OF ENVIRONMENTAL QUALITY



Module 3: Pesticide Labeling



## Pesticide Labeling

#### This Module Will Help You:

- Understand the basis behind pesticide labels
- Read a pesticide label and understand names, ingredients, formulations, signal words, precaution statements, and environmental hazard statements
- Understand directions for mixing and loading, application, storage, and disposal



## Reading the Label





https://youtu.be/ntUlJb650 k



## Labels and Labeling

- Pesticide users must comply with all label instructions!
- Labeling: The label itself, plus all other information referenced on the label or received from the manufacturer (brochures and leaflets)

#### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. **Do not formulate this product into other end-use products.** 





## The Environmental Protection Agency

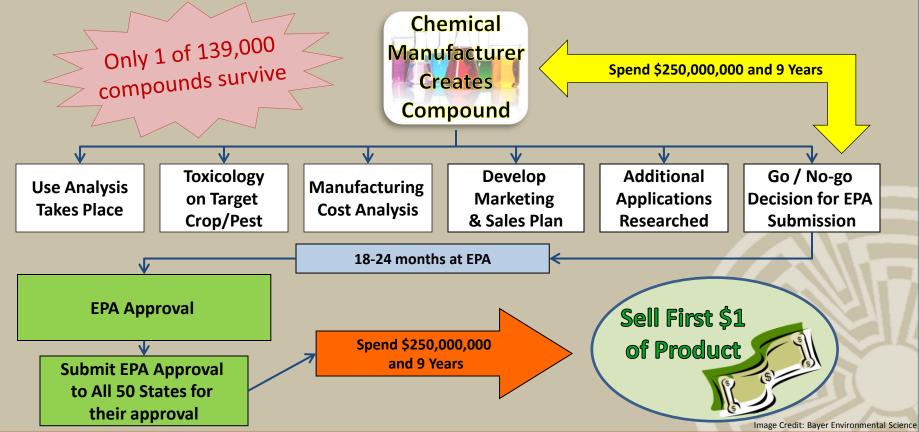
- EPA reviews every pesticide product
- EPA may require labeling changes
- EPA must approve labeling language



Image Credit: EPA.gov



### How a Pesticide Comes to Market



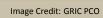


## **Toxicity or Toxicological Tests**



How poisonous or dangerous is a pesticide to <u>humans</u>, <u>wildlife</u>, and other <u>non-target</u> <u>organisms</u>?









## **Efficacy Tests**



Semi-field bioassay testing efficacy of insecticides on leafhoppers. Image Credit: Rutgers University

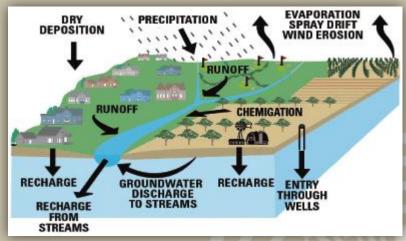
- Does the pesticide manage the pest?
- Does the pesticide cause plant damage - phytotoxicity?





## Pesticide Testing

- Degradation, mobility, and residue tests
  - What happens to the pesticide after it is applied?
  - Does it move through soil to the groundwater?
  - Does it move into plants from the soil?

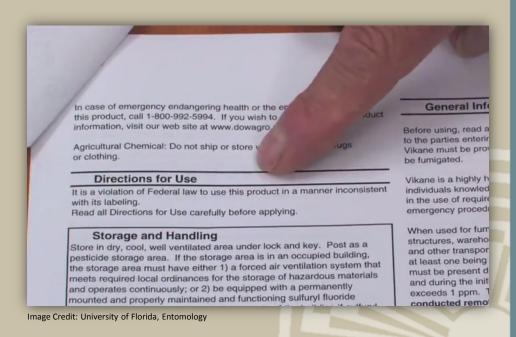


Schematic diagram illustrating routes of pesticides into streams and groundwater.
(Modified from Gilliom and others, 2006.)
Image Credit: U.S. Geological Survey



## Read the Label **BEFORE**:

- Buying the pesticide
- Mixing the pesticide
- Applying the pesticide
- Storing the pesticide
- Disposing of the pesticide container





## Parts of a Pesticide Label: Brand Name

Commercial name



A weed, grass, and harvest aid desiccant/ defoliant herbicide.

#### **Active Ingredients:**

Paraquat dichloride

(tetrachloroisophthalonitrile) ......43.2%

Other Ingredients:..... 56.8%

Total: .....100.00%



## Parts of a Pesticide Label: Manufacturer

 Company that makes or distributes the pesticide

## Knock 'em down 3SL Herbicide By ToxiK™ ◀

A weed, grass, and harvest aid desiccant/ defoliant herbicide.

#### **Active Ingredients:**

Paraquat dichloride

(tetrachloroisophthalonitrile) ......43.2%

Other Ingredients:..... 56.8%

Total: ......100.00%



## Parts of a Pesticide Label: Type

#### **HERBICIDES**



**WEEDS/PLANTS** 

#### **INSECTICIDES**



INSECTS

#### **RODENTICIDES**



RODENTS

#### **FUNGICIDES**



**FUNGI/PLANT PATHOGENS** 

#### **ACARICIDES/MITICIDES**



MITES

#### **MOLLUSCICIDES**



SLUGS and SNAILS



## Parts of a Pesticide Label: Ingredients

- Active ingredient(s)
- Other ingredients



Active Ingredient: Chlorothalonil (tetrachloroisophthalonitrile)	82.5%
Other Ingredients:	17.5%
Total:	100.0%



## Parts of a Pesticide Label: Formulations

Liquid Formulations	Dry or Solid Formulations	Other Formulations
Emulsifiable concentrate (EC)	Dust (D)	Aerosol
Flowable (F)	Dry Flowable (DF)	Fogger
Liquid baits and gels	Wettable powder (WP)	Soil fumigant
Soluble liquids (SL)	Pellets (P)	Structural fumigant



## Parts of a Pesticide Label: EPA Registration Number

- Unique number
- Important for pesticide emergencies



AVOID CONTACT OF HERBICIDE WITH FOLIAGE, GREEN STEMS, EXPOSED NON-WOODY ROOTS OR FRUIT OF CROPS (EXCEPT AS SPECIFIED FOR INDIVIDUAL ROUNDUP READY® CROPS), DESIRABLE PLANTS AND TREES, BECAUSE SEVERE INJURY OR DESTRUCTION MAY RESULT.



## Parts of a Pesticide Label: Signal Words

- Danger Poison
- Danger
- Warning
- Caution





## Parts of a Pesticide Label: First Aid

- First aid for each route of exposure:
  - Eyes
  - Nose
  - Mouth
  - Skin

FIRST AID			
If in eyes	<ul> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Rinse eye only with water. Do not put eye drops, drugs, or ointments in eyes unless specifically recommended by a medical doctor or a poison control center.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>		
If inhaled	Move person to fresh air.     If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.     Call a poison control center or doctor for further treatment advice.		
If on skin or clothing	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.		



## Parts of a Pesticide Label: Precautionary Statements

 How to protect people and the environment

#### STEALTH HERBICIDE EPA REG. NO. 34704-868

#### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Contains Petroleum Distillate. Harmful if swallowed. Causes moderate eye irritation. We and oroughly with soap and water after handling and before eating, drinking, chewing gluin, some set a contact with eyes or clothing. Prolonged or frequently repeated skin contact may cause alleroic reactions in some individuals.

#### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- · Protective eyewear
- Chemical-resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, or viton
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### **Engineering Controls:**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240)(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### USER SAFETY RECOMMENDATIONS

#### Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

This product is toxic to fish. **D0 NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. **D0 NOT** contaminate water when disposing of equipment washwaters or rinsate.

#### Endangered Species Protection

- If endangered plant species occur in proximity to the application site, the following mitigation measures are required:
- If applied by ground, leave an untreated buffer zone of 200 feet. The product must be applied using a low boom (20 inches above the ground) and ASABE fine to medium/coarse nozzles.
- If applied by air, leave an untreated buffer zone of 170 feet. Must use straight-stream nozzles (D-6 or larger); wind can be no more than 8 mph; and release height must be 15 feet or less.

To determine whether your county has an endangered species, consult the website http://www.epa.gov/espp/usa-map.htm.

Endangered Species Bulletins may also be obtained from extension offices or state pesticide agencies. If the bulletin is not available for your specific area, check with the appropriate local state agency to determine if known populations of endangered species occur in the area to be treated.



## Parts of a Pesticide Label: PPE

- Personal protective equipment (PPE) could be different for each of these different tasks:
  - Mixing and loading
  - Applying

#### STEALTH HERBICIDE EPA REG. NO. 34704-868

#### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Contains Petroleum Distillate. Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Avoid contact with eyes or clothing. Prolonged or frequently repeated elies contact may cause allergic reactions in some individuals.

#### Personal Protective Equipment (PPE) Applicators and other handlers must wear: long-sleeved shirt and long pants

- Protective events
- . Chemical-resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, or viton

Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry.

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#### Users should:

- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

#### ENVIRONMENTAL HAZARDS

This product is toxic to fish. **DO NOT** apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. **DO NOT** contaminate water when disosping of equipment washwaters or rinsate.

#### Endangered Species Protection

- If endangered plant species occur in proximity to the application site, the following mitigation measures are required:
- If applied by ground, leave an untreated buffer zone of 200 feet. The product must be applied using a low boom (20 inches above the ground) and ASABE fine to medium/coarse nozzles.
- If applied by air, leave an untreated buffer zone of 170 feet. Must use straight-stream nozzles (D-6 or larger); wind can be no more than 8 mph; and release height must be 15 feet or less.

To determine whether your county has an endangered species, consult the website http://www.epa.gov/espp/usa-map.htm.

Endangered Species Bulletins may also be obtained from extension offices or state pesticide agencies. If the bulletin is not available for your specific area, check with the appropriate local state agency to determine if known populations of endangered species occur in the area to be treated.



## Parts of a Pesticide Label: Environmental Hazards Statement

- Some pesticides are harmful to:
  - Birds
  - Fish
  - Beneficial insects
  - Water resources
  - Nontarget plants

#### STEALTH HERBICIDE EPA REG. NO. 34704-868

#### PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

CAUTION. Contains Petroleum Distillate. Harmful if swallowed. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Avoid contact with eyes or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### Personal Protective Equipment (PPE)

Applicators and other handlers must wear:

- . Long-sleeved shirt and long pants
- · Protective eyewear
- . Chemical-resistant gloves made of barrier laminate, butyl rubber, nitrile rubber, or viton
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exists, use detergent and hot water. Keep and wash PPE separately from other laundry.

#### Engineering Controls:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240)(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

#### **USER SAFETY RECOMMENDATIONS**

#### Users should:

- . Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of nloves before removing. As soon as possible, wash thoroughly and change into clean clothics.

#### **ENVIRONMENTAL HAZARDS**

This product is toxic to fish. **DO NOT** apply directly to water, or to areas where surface water is a sent, or to intertidal areas below the mean high water mark. Drift and running from treated areas may be a contaminate water when disposing of equipment washwaters or rinsate.

#### Endangered Species Protection

- If endangered plant species occur in proximity to the application site, the following mitigation measures are required:
- If applied by ground, leave an untreated buffer zone of 200 feet. The product must be applied using a low boom (20 inches above the ground) and ASABE fine to medium/coarse nozzles.
- If applied by air, leave an untreated buffer zone of 170 feet. Must use straight-stream nozzles (D-6 or larger); wind can be no more than 8 mph; and release height must be 15 feet or less.

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## Parts of a Pesticide Label: Directions for Use

- Sites allowed
- Pests controlled
- Application rates
- Mixing instructions
- Application restrictions

#### BRASSICA LEAFY VEGETABLES CROPS AND TURNIP GREENS

All members of the Brassica Leafy Vegetable Group 5, plus Turnip greens, including: Broccoli, Broccoli raab (rapini), Brussels sprouts, Cabbage, Cauliflower, Cavalo broccolo, Chinese broccoli (gai lon), Chinese cabbage (bok choy), Chinese cabbage (napa), Chinese mustard cabbage (gai choy), Collards, Kale, Kohlrabi, Mizuna, Mustard greens, Mustard spinach, Rape greens, Turnip greens

Mustard greens, Mustard spinach, Hape greens, Turnip greens			
PI	EST	QUARTS OF THIS PRODUCT PER ACRE	SPECIFIC DIRECTIONS
Flea beetles Harlequin bug Leafhoppers		1/2 to 1	Repeat applications as needed up to a total of 4 times per year but not more often than once every 7 days.
Armyworm Aster leafhopper Corn earworm Diamondback moth Fall armyworm Imported cabbageworm	Lygus bugs Spittle bugs Stink bugs Tarnished plant bug	1 to 2	

#### **DIRECTIONS FOR APPLICATION**

CROP	DISEASES (Pathogen)	Lbs. Product/A (lbs. a.i./A)	APPLICATION DIRECTIONS
Asparagus	Rust (Puccinia asparagi) Purple spot (Pleospora herbarum) Cercospora blight (C. asparagi)	1.8 to 3.6 (1.5 to 3.0)	Use water volumes of 25 to 50 gallons per acre. Begin applications following final harvest of spears. Repeat applications at 14 to 28 day intervals (the minimum retreatment interval is 14 days), depending on disease pressure. Use the higher rate and shorter interval if disease severity begins to increase during the season or weather conditions are conducive for severe epidemics.  Apply by ground.

#### Specific Use Restrictions:

- Do not apply more than 11 pounds of Bravo Ultrex (9.0 lbs. a.i.) per acre during each growing season.
- Do not apply within 190 days of the harvest of spears in the following season.



## Parts of a Pesticide Label: Storage and Disposal Instructions

- Storage temperature range
- Specific storage or disposal instructions

#### STORAGE AND DISPOSAL

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

#### Pesticide Storage

Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to the label.

#### **Pesticide Disposal**

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

#### Container Handling [less than or equal to 5 gallons]

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container <sup>1</sup>/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.



## Parts of a Pesticide Label: Non-Agricultural Use Requirements

Can be found on pesticide labels that have both Agricultural and non-Ag uses

#### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls over short-sleeved shirt and short pants, or coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Chemical-resistant footwear plus socks
- Protective eyewear
- Chemical-resistant headgear for overhead exposure

#### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Keep all unprotected persons out of operating areas or vicinity where there may be drift.

For terrestrial uses, do not enter or allow entry of maintenance workers into treated areas, or allow contact with treated vegetation wet with spray, dew, or rain, without appropriate protective clothing until spray has dried.

For aquatic uses, do not enter treated areas while treatments are in progress.





## Remember:

- The host or site <u>must</u> be on the label, but the pest does not have to be listed
- Deviation: Any application method may be used: air, ground, rope-wick
  - Except chemigation. To chemigate the label must state chemigation

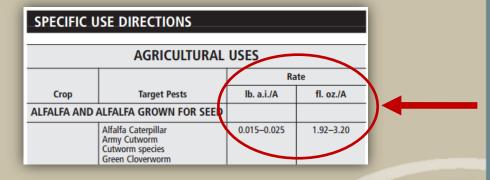




### Remember:

 Deviation: A pesticide may be applied at a lower dose than specified on the label, but not at a higher dose!

 Deviation: Pesticides may be combined with other substances unless prohibited by the label



their control, such as 2,4-D or dicamba.

Kochia and Russian Thistle - Apply a tank mixture of Landmark® XP Herbicide at 4.5 ounces per acre plus diuren at 8 pounds active ingredient per acre.

Do not tank mix Landmark® XP Herbicide with Hyvar® X-L Herbicide.

UNDER ASPHALT AND CONCRETE PAVEMENT



## Safety Data Sheets (SDS)

- Manufacturers required to develop and provide upon request for each product
- Get from your dealer
- Details a product's composition, properties, hazards, first-aid procedures
- Companies required to keep SDS for workers in contact with the substance



## Parts of the SDS

- Chemical product information (active and inert ingredients)
- Physical and chemical properties
  - Solubility, vapor pressure, stability, freezing/boiling point
- Fire and explosion hazards
- Toxicological Information/ Human Health Data
  - Acute, chronic, and delayed toxicity, carcinogenicity, teratogenicity
- Personal Protective equipment
- Other information similar to pesticide label



## Parts of the SDS



DATE OF ISSUE: 01/19/16

**STEALTH®** SUPERSEDES: 10/30/14

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

#### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

- TRADE NAME:
- 1.2 RECOMMENDED USE:
- STEALTH® HERBICIDE HERBICIDE FOR USE IN SELECTED CROPS
- 1.3 SUPPLIER DETAILS: LOVELAND PRODUCTS, INC.
- P.O. Box 1286 Greeley, CO 80632-1286
- 1.4 24 Hour Emergency Phone: 1-800-424-9300 Medical Emergencies: 1-866-944-8565 Product Information: 1-888-574-2878 (LPI-CUST) U.S. Coast Guard National Response Center: 1-800-424-8802

#### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910.1200 Asniration Hazard

Category 1 Carcinogenicity Category 2 H351 Aquatic Toxicity - Acute Category 1 Category 1 Aquatic Toxicity – Long term



Signal word:

H304 - May be fatal if swallowed and enters airways.

H351 – Suspected of causing cancer. H400 - Very toxic to aquatic life.

H410 - Very toxic to aquatic life with long lasting effects.

Precautionary Statement:

P280 - Wear protective gloves/protective clothing/eye protection/face protection. P273 - Avoid release to the environment.

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. (Prevention):

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood.

P272 - Contaminated work clothing should not be allowed out of the workplace.

#### Precautionary

P308+P311: IF exposed or concerned: Call a POISON CENTER or doctor/physician. P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P303+P352 - IF ON SKIN (or hair): Wash with plenty of soap and water

P333+P311 - If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician. P391 - Collect spillage.

P362 - Take off contaminated clothing and wash before reuse.

P331 - Do NOT induce vomiting.

Precautionary

#### Statement: (Storage): (Disposal):

P405 - Store locked up

P501 - Dispose of contents/container to hazardous or special waste collection point.

#### 2.3 Other hazards

The following percentage of the mixture consists of component(s) with unknown hazards regarding the acute toxicity: 1% dermal. The following percentage of the mixture consists of component(s) with unknown hazards regarding the acute toxicity: 1% oral. The following percentage of the mixture consists of component(s) with unknown hazards regarding the acute toxicity: 1% inhalation - vapor. The following percentage of the mixture consists of component(s) with unknown hazards regarding the acute toxicity: 1% inhalation - mist.





## Acknowledgements

Adapted with permission from the Washington State University
Urban IPM and Pesticide Safety Education Program
for use by the

#### **GILA RIVER INDIAN COMMUNITY**

Department of Environmental Quality

Pesticide Control Office

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Web: www.GRICDEQ.org