



Understanding Pesticide Labels and Labeling*

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What Is a Pesticide?

A pesticide, as defined by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), is “. . . any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insect, rodent, nematode, fungus, weed, or any other forms of life declared to be pests; and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.”

Pesticide labels and labeling provide essential directions for the sale and responsible use of these chemicals. The pesticide user is legally responsible to follow all label and labeling directions.

It is a violation of federal law to use pesticide products in a manner inconsistent with their labeling. However, “inconsistent with labeling” does not include:

- applying a pesticide at any dosage, concentration, or frequency **less than that specified on the labeling**,
- applying a pesticide against any target pest not specified on the labeling if the application is to a crop, animal, or site specified on the labeling,
- employing any method of application not prohibited by the labeling, or
- mixing a pesticide or pesticides with a fertilizer when such mixture is not prohibited by the labeling.

The user is personally liable if a pesticide application results in unwanted damage. Chemical companies are very careful to include disclaimers on their products' labels, which transfers all risks to the buyers of their products.

A LABEL— Refers only to information printed on the product container. All labels, which are essentially the manufacturer's license to sell, provide the important facts about Distribution, Storage, Sale, Use, Disposal, and Safety Measures Required for the Pesticide.

LABELING— Refers to any information printed on, attached to, or accompanying your purchase. This may include such things as brochures, leaflets, and information handed out by your dealer.

Pesticide Registration

Registration of pesticides is designed to protect people and the environment from abuse of pesticide use. FIFRA was primarily a labeling law and was originally administered by the U.S. Department of Agriculture. It has been amended several times to increase and expand the protection of users of pesticides, our food and the environment.

Amendments made in 1972 require that pesticides be classified for either general or restricted use. Further, people who apply restricted use pesticides either commercially or privately are required to be certified by their respective states.

Major Types of Pesticide Label Registrations

Different procedures can be used to register a pesticide and its label with the Environmental Protection Agency (EPA). The following are the major types:

- Section 3. This type requires normal procedures (see “Data Requirements for Registration”) to register a pesticide and its label with the EPA. The vast majority of pesticide registrations are in this category.
- Section 18. Emergency Exemption. This type involves an urgent, nonroutine situation that requires the use of pesticide(s). The EPA places three conditions on this type of registration:
 1. no effective registered pesticides are available,
 2. no feasible alternative control practices are available, and
 3. the situation involves the introduction of a new pest or will present significant risks to human health or the environment or will cause significant economic loss.

All Emergency Exemptions are considered Restricted Use materials and require applicator certification despite the nature of the product for regular uses. A copy of the supplemental Emergency Exemption label must be with the product while in use. Also, Crisis Emergency Exemptions can be issued in exceptional situations. Please see fact sheet PATFACT 005, Pesticide Registrations: Section 18 Emergency Exemption, for more information.

4) PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)
DANGER

5) ENVIRONMENTAL HAZARDS

6) PHYSICAL OR CHEMICAL
HAZARDS

7) DIRECTIONS FOR USE

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

8) RE-ENTRY STATEMENT
(if Applicable)

9) CATEGORY OF APPLICATOR

10) STORAGE AND
DISPOSAL

STORAGE _____

DISPOSAL _____

CROP: _____

11) RESTRICTED USE
PESTICIDE

FOR RETAIL SALE TO AND APPLICATION ONLY BY
CERTIFIED APPLICATORS OR PERSONS UNDER THEIR
DIRECT SUPERVISION

1) PRODUCT
NAME

2) ACTIVE INGREDIENT: _____ %

3) INERT INGREDIENTS: _____ %

TOTAL: _____ 100.00%

THIS PRODUCT CONTAINS _____ LBS OF _____ PER GALLON

KEEP OUT OF REACH OF CHILDREN
12) DANGER — POISON



13)

14) STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED _____

IF INHALED _____

IF ON SKIN _____

IF IN EYES _____

SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

15) MFG BY _____
TOWN, STATE _____

ESTABLISHMENT NO. _____

16) EPA REGISTRATION NO. _____

17) NET CONTENTS _____

WARRANTY STATEMENT

7) CROP: _____

- Section 24(c). Special Local Needs. This type involves an existing or imminent pest problem within a state for which the State Lead Agency (Division of Pesticides), based on satisfactory supporting information, has determined that an appropriate Federally registered product is not sufficiently available. Special Local Needs (SLN) registrations allow for supplemental labeling of a Section 3 label. These registrations are particularly useful in providing needed pest control materials for minor uses. Please see fact sheet PATFACT 006, Pesticide Registrations: Section 24(c) Special Local Needs, for more information.

Data Requirements for Registration

As specified in amended FIFRA, all pesticides must be registered. This includes all pesticides used in and around homes; swimming pools, businesses, public buildings, and in agriculture. Before any registration is issued, however, the manufacturer (applicant) must submit data to the Pesticide Registration Division of the EPA showing that the product when used as directed:

- is effective against the pest(s) listed on the label,
- will not injure humans, animals, or crops, or damage the environment, and
- will not result in illegal residues on feed and food.

Parts of the Label

Please refer to the figure of a label on page 2.

1. BRAND NAME—Appears boldly on the label. It is the name by which the product is advertised.

Common name—The same chemical may appear on the shelf under several brand names, but the common name, or chemical name, may be the same.

For example, carbaryl is the common name for Sevin. Its chemical name, 1-naphthyl N-methylcarbamate, is difficult to remember.

Ingredient statement—Two kinds of ingredients form pesticides: active ingredients and inert ingredients.

2. ACTIVE INGREDIENTS—Listed by either chemical name or common name. Must be stated as a percentage by weight or pounds per gallon of concentrate.

3. INERT INGREDIENTS—Need not be listed on most products, but percent of their content must be. Inert ingredients are currently placed into four categories by the EPA. They include:

- Inerts of toxicological concern,
- Potentially toxic inerts (high priority),
- Inerts of unknown toxicity, and
- Inerts of minimal concern.

Types of Formulations—Pesticides come in different forms: liquids, wettable powders, dusts, etc. Each form is handled differently, and the label identifies the formulation. An example is 4E, which means it is an emulsifiable concentrate (E) with 4 pounds of active ingredient per gallon. Emulsifiable concentrates can also be represented by EC.

Other common types of formulations include:

F, L, or FL *Flowables*
ULV *Ultra Low Volume*

D *Dusts*

B *Baits*

G *Granulars*

P or PS *Pellets*

W or WP *Wettable Powders*

S or SP *Soluble Powders*

DF *Dry Flowables*

WDG *Water Dispersable Granules*

WDL *Water Dispersable Liquids*

Other less common formulations include:

AF *Aqueous Flowables*

AS *Aqueous Suspensions*

ES *Emulsifiable Solutions*

MTF *Multiple Temperature Formulation*

OL *Oil-soluble Liquids*

SL *Slurries*

Microencapsulation Liquid or dry pesticide particles may be surrounded by a plastic coating to produce a microencapsulated formulation.

Precautionary Statement

4. HAZARDS TO HUMANS AND DOMESTIC ANIMALS—These statements warn you of possible poisoning to humans and animals. Special precautions, including necessary protective equipment, appear here. If the product carries serious risk, proper poison treatment is listed.

5. ENVIRONMENTAL HAZARDS—Warnings here may include general statements about birds, fish, and wildlife or include statements concerning toxicity to honeybees, surface and groundwater contamination, and endangered species. Label information on groundwater contamination warns against applying pesticides in situations which may lead to contamination of groundwater.

6. PHYSICAL AND CHEMICAL HAZARDS—Warnings appear here about potential fire, explosion, or chemical hazards.

7. DIRECTIONS FOR USE—Explanation of correct use of the product. Also tells you what pests the product is registered to control, where the product can be used, when it should be used, how much to use, and in what form to use it. This section also says whether the product is for general or restricted use.

Misuse statement

You are warned here that if you fail to follow label directions exactly, you are violating federal law.

Worker Protection Standard (WPS)

Labels of agricultural pesticides will require compliance with the Worker Protection Standard (WPS). This part of the label will usually be called “Agricultural Use Requirements.” You must comply with ALL the revised WPS requirements if you are affected by WPS.

8. REENTRY STATEMENT—Some products require that a person without protective clothing not enter the treated area until a certain amount of time has passed. Consult local authorities for special rules that may apply.

9. CATEGORY OF APPLICATOR—If required for this product, this section will limit use to certain categories of commercial applicators.

10. STORAGE AND DISPOSAL DIRECTIONS—Pesticide labels will have some basic guidelines for pesticide storage, usually recommending that they be stored in a cool, dry, well-ventilated area away from feed and foodstuffs. And different types of pesticides should be stored separately: herbicides separate from insecticides as an example. The pesticide storage area should be well marked with warning signs and be locked to prevent unauthorized entry. Improper disposal of excess pesticide, spray mixture, rinsate, or the container is a violation of federal law. If these wastes cannot be disposed of according to label directions, contact the Kentucky Division of Waste Management (502) 564-6716, or the National Pesticide Telecommunication Network (800) 858-7378 (24 hour), for guidance.

NOTE: Burning pesticide containers is illegal in Kentucky.

11. STATEMENT OF USE CLASSIFICATION—The label must show whether the pesticide is for general or restricted use. Use is based on the hazard of poisoning, the way the pesticide is used, and its effect on the environment. **General use**—According to FIFRA, a general use pesticide is one that, when applied according to its directions, will not generally cause unreasonable adverse effects on the environment.

Restricted use—Restricted use pesticides have a statement at the top of the label's front panel saying "Restricted use pesticide for retail sale to and application only by certified applicators or persons under their direct supervision." According to FIFRA, a restricted use pesticide is one that, when applied according to its directions, may generally cause unreasonable adverse effects on the environment, including injury to the applicator.

12. SIGNAL WORDS—Signal words, standard by law in the industry, tell you how severely toxic a pesticide is. The three signal words used on pesticide labels are DANGER, WARNING and CAUTION. Pesticides with the signal word DANGER are most toxic or hazardous and their use is normally restricted. They will usually have the word "Poison" and the skull and crossbones on the label.

Less toxic pesticides may be given the signal word WARNING if there is a specific hazard, such as severe skin or eye injury, or a particular danger to the environment. For these, the word "Poison" or the skull and crossbones is not on the label. Pesticides with the signal word CAUTION are least toxic to people and are generally less hazardous. Every product label must have "Keep Out of the Reach of Children" and carry one of the signal words:

Signal Word	Toxicity	Approximate Amount Needed to Kill 50% of a Laboratory Population of Test Animals (Mice, Rats, Etc.) if Taken Orally
DANGER	Highly Toxic	A taste to 1/8 of an ounce
WARNING	Moderately Toxic	1/8 ounce to a little over an ounce
CAUTION	Slightly Toxic	A little over an ounce to more than a pint (16 ounces)

13. SYMBOL—The skull and crossbones symbol attracts attention to highly toxic materials. The symbol is accompanied by the signal word DANGER and the word POISON.

14. STATEMENT OF PRACTICAL TREATMENT—Emergency first aid is spelled out in this section. In addition, you are told what exposure requires medical attention, such as swallowing or inhaling the product or getting it in your eyes or on your skin. In the case of a possible poisoning, it is important to take the pesticide label to the attending physician.

15. NAME AND ADDRESS OF MANUFACTURER—The law requires the manufacturer to identify itself by name and address.

16. REGISTRATION AND ESTABLISHMENT NUMBERS—The registration number shows that the product is properly registered with the federal government (Environmental Protection Agency). The establishment number identifies the factory and appears on the container but may not be on the label.

17. NET CONTENTS—The net contents tells you the amount in the container.

The following Cooperative Extension publications give more information on pesticides.

- *Commercial Vegetable Crop Recommendations* (ID-36) (revised every two years. Be sure to use the most current version.)
- *Kentucky Commercial Tree Fruit Spray Guide* (ID-92) (revised every year)
- *Kentucky Commercial Small Fruit Spray Guide* (ID-94) (revised every year)
- *Guidelines for Pesticide Use* (ID-98)
- *Insect Management Recommendations for Field Crops and Livestock* (revised every year)
- *Chemical Control of Weeds in Kentucky Farm Crops* (AGR-6) (revised every year)
- *Herbicide Persistence and Carryover in Kentucky* (AGR-139)
- *Herbicides with Potential to Carry Over and Injure Rotational Crops in Kentucky* (AGR-140).
- *Agricultural Chemical Storage and Handling* (IP-41) (Part of the Kentucky Assessment System or KY•A•Syst)