



Practice Analyzing an Insecticide Label

Find answers to these 20 questions by analyzing the fake insecticide label on pages 3–6. If there is a blank space below the question, write your answer there. If there are three or four lettered choices below the question, mark one of them as your answer. Compare your answers to those on pages 7–8.

1. What is the *brand name* of this product?
2. What is the *formulation* of this product?
3. How many *active* ingredients are in this product?
4. What is the *percent by weight* of the active ingredient in this product?
5. How much active ingredient does 1 gallon of this product contain?
6. What is the *EPA Registration Number* for this product?
7. What is the relative acute toxicity of this product to humans?
 - (a) Highly toxic
 - (b) Moderately toxic
 - (c) Slightly toxic
8. How much liquid would be in an unopened container of this product?
9. What is the first action you should take if this product gets into your eyes?
10. What item should you have with you when calling a poison control center or doctor to help someone who was exposed to this product?
11. What sensations or symptoms would some individuals feel if this product gets on their skin?

12. What material should your gloves be made of when spraying this product?
- (a) Nitrile
 - (b) Neoprene
 - (c) Viton
 - (d) Polyethylene
13. What is the first action you should take to confine a spill of a liquid containing this product?
14. What dilution rate is *illegal* to use against ants on ornamental plants being grown on the grounds of a shopping mall?
- (a) 2 fl. oz. per 1 gal. of water
 - (b) 1 fl. oz. per 1 gal. of water
 - (c) 1/2 fl. oz. per 1 gal. of water
 - (d) 1/4 fl. oz. per 1 gal. of water
15. What is the most concentrated dilution rate you may use against ants on potted ornamental plants in a commercial nursery?
16. What is the most concentrated dilution rate allowed for spraying a nest of wasps?
17. How much of this product should you measure out to make 3 gallons of spray mixture with a concentration of 0.1% active ingredient?
- (a) 1 fluid ounce
 - (b) 1.5 fluid ounces
 - (c) 2 fluid ounces
 - (d) 2.5 fluid ounces
18. To spray for cluster flies, what is the only fluid you are allowed to dilute this product with?
- (a) Undiluted sweetened condensed milk
 - (b) Undiluted corn syrup concentrate
 - (c) Deodorized light weight mineral oil
 - (d) Mixture of yeast and vegetable oil
19. When bathing a pet dog to control fleas, how many fluid ounces of this product are you allowed to put in each gallon of the water used for the final rinse?
20. When you are rinsing out this product's empty container to make it ready for disposal, how much water should you put in the container for the first rinse?

Note to Reader: Use this fake label *only* to practice analyzing information on pesticide labels. There is no product named *Pynolete* or *Pynolete 2E*. I made up the product's name, manufacturer's name, address, EPA Registration Number, EPA Establishment Number, symptoms of exposure, and all chemical names and telephone numbers.

RESTRICTED USE PESTICIDE
DUE TO HIGH TOXICITY TO AQUATIC ORGANISMS
For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification.

Pynolete® 2E

Insecticide

Only for Use and Storage by Professional Pest Control Operators

ACTIVE INGREDIENT:	By Weight
Synathrin: (±)α-dyano-(4-phenaxyphanyl)methyl(±)-cis,frans -3-(2,2-dichloroethenyl)-2,2-trimethylcyclopropenecarbaxylite.	24.8%
OTHER INGREDIENTS:	75.2%
TOTAL	100.0%

Pynolete 2E contains 2 pounds active ingredient per gallon.

EPA Reg. No. 4236-705

EPA Est. 4236-MO-1

KEEP OUT OF REACH OF CHILDREN

WARNING

See Below for Additional Precautionary Statements.

Xxxxx Corporation
P. O. Box 777777, Kansas City, MO 77777-7777

Net Contents: 1 Quart

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FIRST AID

IF SWALLOWED

- Call poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by the poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF IN EYES

- Hold eye open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center or doctor for 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.

IF INHALED

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.
- Call a poison control center or doctor for further treatment advice.

HOTLINE NUMBER

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-555-9776 for Emergency Assistance.

NOTE TO PHYSICIAN

Pynolete 2E is a pyracoid insecticide containing the active ingredient synathrin. Oral toxicity is low, but because synathrin is lipophilic, do not administer milk, cream or other substances containing vegetable or animal fats, which enhance absorption. Treatment is otherwise symptomatic and supportive.

For information about using this product, call 1-800-555-0976.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

WARNING. Harmful if inhaled, swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid breathing vapor or spray mist. Avoid contact with skin, eyes and clothing. The active ingredient may produce sensations

(tingling, itching, warming, or chilling) in some individuals. Wear impermeable gloves made of nitrile when spraying. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove contaminated clothing and wash before reuse.

Environmental Hazards

This product is extremely toxic to fish and other aquatic organisms. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment wash-waters. Apply this product only as specified on this label. Care should be used when spraying to avoid fish and reptile pets. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters. Applying this product in calm weather when rain is not predicted for the next 24 hours will help to ensure that wind or rain does not blow or wash pesticide off the treatment area. Rinsing application equipment over the treated area will help avoid run off to water bodies or drainage systems.

Physical/Chemical Hazards

Do not use or store near heat or open flame.

DIRECTIONS FOR USE

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

Not for use on plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes. For use on plants intended for aesthetic purposes or climatic modification and being grown in interior plantscapes, ornamental gardens or parks, or lawns and grounds.

For residual pest control in and on buildings and structures and their immediate surroundings and on modes of transport. Permitted areas of use include industrial buildings, houses, apartment buildings, laboratories, buses, greenhouses (non-commercial), and the nonfood/feed areas of stores, warehouses, vessels, railcars, trucks, trailers, aircraft (but not in aircraft cabins), schools, nursing homes, hospitals, restaurants, hotels, and food manufacturing, processing, and servicing establishments.

Pynolete 2E Insecticide is to be diluted with water for spray or brush application. Fill sprayer with the desired volume of water and add Pynolete 2E Insecticide. Close and shake before use in order to insure proper mixing. Mix only the amount of solution needed for the application. Retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Repeat application is necessary only if there are signs of renewed insect activity. Repeat application should be limited to no more than once per seven days.

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Pests	Concentration of Active Ingredient	Dilution Rate
Ants Centipedes Cockroaches Crickets Earwigs Beetles	Firebrats Fleas Millipedes Mosquitoes Pillbugs Silverfish Sowbugs	0.1%
Bees Spiders Ticks Wasps		0.2%
		1/2 fl. oz. per 1 gal. of water
		1 fl. oz. per 1 gal. of water

INDOOR USE

Cockroaches, Crickets, Firebrats, Silverfish, Spiders, and Ticks: Apply as a coarse, low pressure spray to areas where these pests hide, such as baseboards, corners, storage areas, closets, around water pipes, doors and windows, attics and eaves, behind and under refrigerators, cabinets, sinks, furnaces, and stoves, the underside of shelves, drawers and similar areas. Pay particular attention to cracks and crevices; also see OUTDOOR USE.

Ants: Apply to any trails, around doors and windows and other places where ants may be found. Refer to BARRIER TREATMENT directions to prevent infestation; also see OUTDOOR USE.

Bees and Wasps: Application to nests should be made late in the evening when insects are at rest. Thoroughly spray nest and entrance and surrounding areas where insects alight; also see OUTDOOR USE.

Centipedes, Earwigs, Beetles, Millipedes, Pillbugs, and Sowbugs: Apply around doors and windows and other places where these pests may be found or where they may enter premises. Spray baseboards, storage areas and other locations. Refer to BARRIER TREATMENT directions to prevent infestation; also see OUTDOOR USE.

Food Handling Establishments: Places other than private residences in which food is held, processed, prepared or served.

Nonfood Areas: Includes garbage rooms, lavatories, floor drains (to sewers), entries and vestibules, offices, locker rooms, machine rooms, boiler rooms, garages, mop closets, and storage (after canning or bottling). Pynolete 2E insecticide may be used as a general spot, crack and crevice treatment in nonfood areas. All areas where insects hide or through which insects may enter should be treated.

Food Areas: Do not use in food/feed areas of food handling establishments, restaurants or other areas where food is commercially prepared or processed. Do not use

in serving areas while food/feed is exposed or facility is in operation. Serving areas are areas where prepared foods are served such as dining rooms, but excluding areas where foods may be prepared or held. In the home, all food processing surfaces and utensils should be covered during treatment or thoroughly washed before use. Exposed food/feed should be covered or removed. Not for use in Federally inspected meat and poultry plants.

OUTDOOR USE

All outdoor applications must be limited to spot or crack-and-crevice treatments only, except for the following permitted uses:

1. Treatment to soil or vegetation around structures;
2. Applications to lawns, turf, and other vegetation;
3. Applications to building foundations, up to a maximum height of 3 feet.

Other than applications to building foundations, all outdoor applications to impervious surfaces such as sidewalks, driveways, patios, porches and structural surfaces (such as windows, doors, and eaves) are limited to spot and crack-and-crevice applications, only.

Ants, bees, biting flies, centipedes, cockroaches, crickets, earwigs, beetles, firebrats, fleas, flies, millipedes, mosquitoes, pillbugs, silverfish, sowbugs, spiders, ticks, and wasps: Apply by brush or as a residual spray either by hand or power sprayer. Apply to surfaces of buildings, porches, screens, window frames, eaves, patios, residential lawns adjacent to or around private homes, duplexes, townhouses, condominiums, house trailers, apartment complexes, carports, garages, fence lines, storage sheds, barns, and other residential and non-commercial structures, vegetation, refuse dumps, garages and in other areas where pests are found. Remove all exposed food and cooking utensils. Cover all food handling surfaces or wash thoroughly after treatment and before use.

Barrier Treatment: To prevent infestation of buildings, apply to a band of soil and vegetation 6 to 10 feet wide around and adjacent to the building. Also, treat the building foundation to a height of 2 to 3 feet where pests are active and may find entrance. Apply as a coarse spray. Thoroughly and uniformly wet the band area, using 1 gallon of spray mix per 400 square feet.

Cluster Flies (*Calliphoridae* spp): Apply to the outside of the structure where flies are found. Mix 1 fl. oz. Pynolete 2E to 10 fl. oz. deodorized light weight mineral oil. (Do not use any other type of diluent). Apply mixture to 1,000 square feet of wall area. Use a fogging apparatus which delivers the material in a strong air carrier, producing a small particle size (10–50 microns). Hold the nozzle about three feet from the surface to be treated. Apply when wind velocity is less than 2 mph to avoid drift.

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The surface to be treated should be dry at the time of application. Attics and unoccupied lofts should be treated at the same time and at the same rate.

Do not use water-based sprays of Pynolete 2E in conduits, motor housings, junction boxes, switch boxes, or other electrical equipment because of possible shock hazard.

Do not apply this product to edible crops.

Do not apply this product to soil in crawl spaces.

Keep people and pets off surfaces until dry.

For best results, thoroughly wash out sprayer and screen with water and detergent before using Pynolete 2E insecticide.

Do not use this product with oil (except for cluster fly control).

Do not treat pets with this product.

Do not apply in classrooms when in use.

Do not apply this product in patient rooms or in any rooms while occupied by the elderly or infirm.

STORAGE AND DISPOSAL

Pesticide Storage

Do not store below 40°F. Keep out of reach of children. Store in original containers only. Store in a cool, dry place and avoid excess heat. Carefully open containers. After partial use, replace lids and close tightly. Do not put concentrate or dilute material into food or drink containers. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

In case of spill, avoid contact, isolate area and keep out animals and unprotected persons. Confine spills. Call CHEMTRAC (Transportation and Spills): (800) 555-1081.

To confine spill: If liquid, dike surrounding area or absorb with sand, cat litter, or commercial clay. If dry material, cover to prevent dispersal. Place damaged package in a holding container. Identify contents.

Pesticide Disposal

Pesticide wastes are toxic. 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 Disposal

Metal or Plastic Containers: Nonrefillable container. Do not reuse or refill this container. Triple rinse container

(or equivalent) promptly after emptying. Triple rinse as follows:

For containers greater than 5 gallons—Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the *rinsate* into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

For containers 5 gallons or less—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 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Do not cut or weld metal containers,

Here are the answers to the 20 questions on pages 1–2.

1. What is the *brand name* of this product?

Answer: **Pynolete 2E Insecticide**

Find it on page 3. The brand name is the same as the product name.

2. What is the *formulation* of this product?

Answer: **Emulsifiable concentrate**

Find it on page 3. In the brand name, notice E, the capital letter in 2E. That is one of the common abbreviations for *emulsifiable concentrate*. The other is "EC" which appears in brand names of some other products.

3. How many active ingredients are in this product?

Answer: **One**

Find it on page 3. Notice that only one is listed, directly below ACTIVE INGREDIENT.

4. What is the *percent by weight* of the active ingredient in this product?

Answer: **24.8%**

Find it on page 3.

5. How much active ingredient does 1 gallon of this product contain?

Answer: **2 pounds per gallon**

Find it on page 3, directly below TOTAL...100.0%.

• For certain calculations, this is a practical way to determine the concentration of the product. It's more practical than 24.8% by weight because we don't usually weigh liquids. (You don't need to know how much one gallon of this product weighs. All you need to know is that each gallon of product contains 2 pounds of active ingredient. With that information, you can figure out how much active ingredient is in 2 gallons or 1/4 gallon or any other number of gallons.)

• Also notice that the answer matches the 2, in 2E, which usually means that the product is a 2-pounds-per-gallon emulsifiable concentrate.

6. What is the *EPA Registration Number* for this product?

Answer: **4236-705**

Find it on page 3, next to EPA Reg. No.

7. What is the relative acute toxicity of this product to humans?

(a) Highly toxic

(b) Moderately toxic

(c) Slightly toxic

Answer: **(b) Moderately toxic**

That answer matches the signal word "WARNING" which appears on page 3 and page 4.

• On page 3, it's directly below KEEP OUT OF REACH OF CHILDREN.

• On page 4, it's in the left column, directly below Hazards to Humans and Domestic Animals.

• Here's more information about signal words: For each pesticide product, the label will show only one of the three signal words, **DANGER**, **WARNING**, or **CAUTION**. For each signal word, you should learn if it means that the product's relative acute toxicity to humans high, moderate, or low.

8. How much liquid would be in an unopened container of this product?

Answer: **1 quart**

Find it on page 3, near the bottom next to Net Contents.

9. What is the first action you should take if this product gets into your eye?

Answer: **Hold eye open and rinse slowly and gently with water for 15–20 minutes.**

Find it on page 4, in the left column.

10. What item should you have with you when calling a poison control center or doctor to help someone who was exposed to this product?

Answer: **The product container or label**

Find it on page 4, in the left column under HOT-LINE NUMBER.

11. What sensations or symptoms would some individuals feel if this product gets on their skin?
Answer: **Tingling, itching, warming, or chilling**
Find it on page 4, from the bottom of the left column to the top of the right column.
12. What material should your gloves be made of when spraying this product?
(a) Nitrile
(b) Neoprene
(c) Viton
(d) Polyethylene
Answer: **(a) Nitrile**
Find it on page 4, in the right column.
13. What is the first action you should take to confine a spill of a liquid containing this product?
Answer: **If liquid, dike surrounding area or absorb with sand, cat litter, or commercial clay.**
Find it on page 6, in the box, in the left column.
14. What dilution rate is *illegal* to use against ants on ornamental plants being grown on the grounds of a shopping mall?
(a) 2 fl. oz. per 1 gal. of water
(b) 1 fl. oz. per 1 gal. of water
(c) 1/2 fl. oz. per 1 gal. of water
(d) 1/4 fl. oz. per 1 gal. of water
Answer: **(a) 2 fl. oz. per 1 gal. of water**
It is illegal to make a spray mixture more concentrated than allowed by the label.
15. What is the most concentrated dilution rate you may use against ants on potted ornamental plants in a commercial nursery?
Answer: **Zero**
In other words, you must *not* use this product to treat potted ornamental plants in a commercial nursery. That's because the label says: Not for use on plants being grown for sale or other commercial use... Find that statement on page 4, in the right column, under DIRECTIONS FOR USE.
16. What is the most concentrated dilution rate allowed for spraying a nest of wasps?
Answer: **1 fluid ounce per 1 gallon of water**
Find it on page 5, in the box.
17. How much of this product should you measure out to make 3 gallons of spray mixture with a concentration of 0.1% active ingredient?
(a) 1 fluid ounce
(b) 1.5 fluid ounces
(c) 2 fluid ounces
(d) 2.5 fluid ounces
Answer: **(b) 1.5 fluid ounces**
Get this answer with one calculation; multiply: $1/2 \times 3$. "1/2" comes from the box on page 5. In that box, notice that 1/2 fl. oz. per 1 gal. of water is in the same row as 0.1%.
18. To spray for cluster flies, what is the only fluid you are allowed to dilute this product with?
(a) Undiluted sweetened condensed milk
(b) Undiluted corn syrup concentrate
(c) Deodorized light weight mineral oil
(d) Mixture of yeast and vegetable oil
Answer: **(c) Deodorized light weight mineral oil**
Find it on page 5, in the right column.
19. When bathing a pet dog to control fleas, how many fluid ounces of this product are you allowed to put in each gallon of the water used for the final rinse?
Answer: **Zero**
In other words, you must *not* use this product to treat any pet. That's because the label says: Do not treat pets with this product. Find that statement on page 6, in the right column.
20. When you are rinsing out this product's empty container to make it ready for disposal, how much water should you put in the container for the first rinse?
Answer: **1/4 full**
Find it on page 6, in the box, in the right column. Notice there is one paragraph of instructions For containers greater than 5 gallons and another For containers 5 gallons or less. And, near the bottom of page 3, notice the phrase Net Contents: 1 Quart. This means you should follow the disposal instructions for containers 5 gallons or less.