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READ THE ENTIRE LABEL BEFORE USING THIS PRODUCT.

USE ONLY IN ACCORDANCE WITH INSTRUCTIONS.

KEEP OUT OF REACH OF CHILDREN

PLUNGE 85 WP



INGREDIENTS

Carbaryl 85%
Other ingredients 15%

PLUNGE 85 WP is a wide-spectrum carbamate insecticide (from lawncare to cockroaches, ticks, lice and fleas) which controls over 100 species of **insects** on citrus, fruit, cotton, forests, lawns, nuts, ornamentals, shade trees, and other crops, as well as on **poultry, livestock, and pets**. It is also used as a **molluscicide** (on snails) and an **acaricide**. PLUNGE 85 WP works whether it is ingested into the stomach of the pest or absorbed through direct contact.

It is available as bait, dusts, wettable powders, granules, dispersions and suspensions.

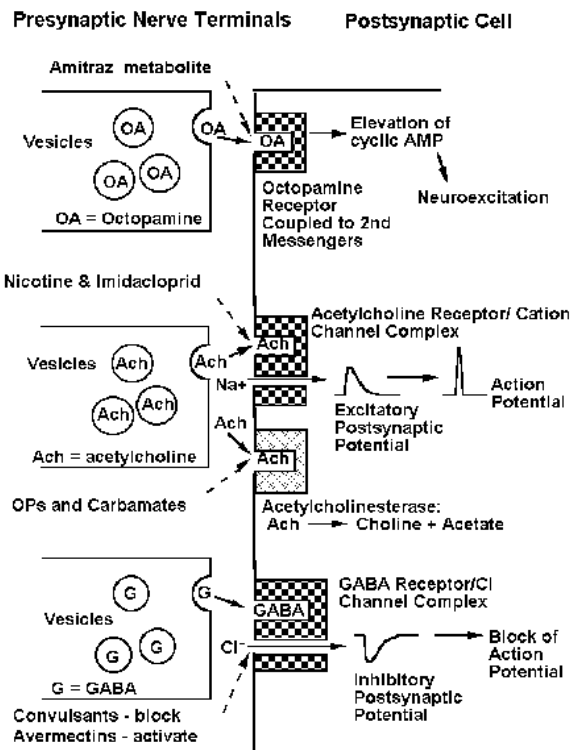
Trade Names Of Other Firms: Trade names for products containing Carbaryl include Adios, Bugmaster, Carbamec, Carbamine, Crunch, Denapon, Dicarbam, Hexavin, Karbaspray, Nac, Rayvon, Septene, Sevin, Tercyl, Torndao,

Thinsec, Tricarnam, and Union Carbide 7744.

What is PLUNGE 85 WP and how does it work?

PLUNGE 85 WP works whether it is ingested into the stomach of the pest or absorbed through direct contact.

Action of Insecticides on Synaptic Receptors



Key Benefits of PLUNGE 85 WP:

- 1) Quick knockdown effect.
- 2) Trusted performance. Reliable.
- 3) Used worldwide over many years by major partners.

PRECAUTIONS

Product is poisonous if swallowed or absorbed by skin contact. Will irritate eyes and skin. Repeated minor exposure may have a cumulative poisoning effect. Facial skin contact may cause temporary facial numbness. Avoid all contact by mouth, skin, and eyes. Avoid inhaling vapour or spray mist. When opening the container and preparing spray, wear cotton overall buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves, face shield or goggles. If clothing become contaminated with product or wet spray, remove

clothing immediately. If product or spray contacts skin and eyes, immediately wash affected area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

SYMPTOMS OF POISONING

Irritation on skin or eyes.

MEDICAL TREATMENT

Treatment is symptomatic.

FIRST AID

If skin contacts, remove all contaminated clothing at once; thoroughly wash affected areas with soap and water. If eyes contact, flush for 15 minutes with large amount of water. If inhaled, remove patient to fresh air. In all cases, notify a physician and present this label. Ingestion: Do not induce vomiting or administer liquids. Vomiting should be induced only under professional supervision. Keep patient prone and quiet. Get medical aid. ONLY A PHYSICIAN should induce vomiting as first aid for this slightly toxic substance due to increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent.

DIRECTIONS OF USE

Used on **cattle**, mainly for the control of ticks, lice and fleas, some of which are disease vectors, and on **poultry, cats and dogs**.

PUBLIC HEALTHRAMMES - The 50 g/kg formulated powder has been used for **rodent flea** control.

Pre-harvest treatment of many **crops**, particularly cotton, rice, maize, vegetables, potatoes and fruit. Also used on ornamentals, turf and forest and shade trees. The usual application rates are 0.25-2 kg/ha, but up to 10 kg/ha may be used for tree fruits.

CITRUS FRUITS

Pest	Pounds per acre	Acres treated	Specific Directions
Avacado leafroller California orangedog Citrus cutworm Fruittree leafroller Orange Tortrix Western tussock moth	2.5 - 3.75	0.5 - 0.3	Observe bee caution. Repeat applications as necessary up to a total of 8 times but not more often than once every 14 days For scale control, apply when crawlers are present
Citrus rust mite Eriophyrid mites Plant bugs Scale insects (black scale, brown soft scale, California red scale, yellow scale, citrus snow scale)	3.75 - 6.25	0.3 - 0.2	For best control of Eriophyrid mites, including citrus rust mite, apply when pest population are low.
Apopka weevil (adult) Citrus root weevils (adults) Fuller rose Beetle Little leaf notcher (adult)	6.25 - 9.75	0.2 - 0.13	

Do not apply within 5 days of harvest
Do not apply more than a total of 25 pounds per acre per crop.

OLIVES

Pest	Pounds per acre	Acres treated
Scale insects	6.25 - 9.75	0.2 - 0.13

Up to 2 applications per crop may be made but not more often than once every 14 days.

POME FRUITS

(apples, pears, loquats, crabapples, oriental pears)

Pest	Pounds per acre	Acres treated
White apple leafhopper	0.625 – 1.875	1.8 – 0/67
Apple aphid Codling moth	1.25 – 3.25	1.0 – 0.3
Apple aphid Apple maggot Apple mealybug Apple rust mite Bagworms California pearslug (pear sawfly) European apple sawfly Eyepotted bud moth Fruittree leafroller Gypsy moth Japanese beetle Lesser appleworm Lygus bugs Orange tortrix Pearleaf blister mite Pear rust mite Periodical cicada Plum curculio Redbanded leafroller Scale insects	1.875 – 3.75	0.67 – 0.3

Observe bee cautions.

On apples, avoid use during the period from full bloom until 30 days after full bloom unless fruit thinning is desired. Use for pest control during this period also may result in fruit removal. Repeat applications as necessary up to a total of 8 times per crop (including thinning sprays on apples) but not more often than once every 14 days. For psylla control, apply when eggs hatch or young nymphs are present. For scale control, apply when crawlers are present.

STONE FRUITS

(apricots, cherries, nectarines, peaches, plums, prunes)

Pest	Pounds per acre	Acres treated
Apple pandemis Black cherry aphid Cherry fruitworm Cherry maggot Codling moth Cucumber beetles Eastern tent caterpillar Eyespotted bud moth European earwig Fruittree leafroller Green fruitworm Gypsy moth Japanese beetle June beetle Lesser peachtree borer Mealy plum aphid Orange tortrix Oriental fruit moth Peach twig borer Periodical cicada Plum curculio Prune leafhopper Redbanded leafroller Rose chafer Scale insects	2.5 – 3.25	0.5 – 0.3

Observe bee caution.

Repeat applications as necessary up to a total of 3 times per crop but not more often than once every 7 days. An additional application at the dormant or delayed dormant timing may be made. For optimal scale control, apply when crawlers are present. For lesser peachtree borer, best results have been found by thoroughly spraying limbs and tree trunks at weekly intervals during moth flight.

PISTACHIOS

Pest	Pounds per acre	Acres treated
Brown soft scale Lecanium scale Navel orangeworm	3.25 – 6.25	0.3 - 0.2

Repeat applications as necessary up to a total of 4 times per crop (including any applications at the dormant or delayed dormant timing) but not more often than once every 7 days. For scale control, apply when crawlers are present.

Pest	Pounds per acre	Acres treated
Scale insects	5 – 6.75	0.25 – 0.2

For dormant or delayed dormant timing, apply in combination with recommended dormant oil. Refer to the dormant oil product label for additional use directions and restrictions.

TREE NUTS

(Almonds, chestnuts, filberts, pecans, walnuts)

Pest	Pounds per acre	Acres treated
Black margined aphid	2.5 –	0.5- 0.2
Calico scale	6.25	
Codling moth		
European fruit lecanium		
Fall webworm		
Filbert leafroller		
Filbertworm		
Frosted scale		
Fruittree leafroller		
Hickory shuckworm		
Lesser webworm		
Navel orangeworm		
Peach twig borer		
Pecan leaf phyloxera		
Pecan nut casebearer		
Pecan spittlebug		
Pecan weevuk		
San Jose scale		
Twig girdler		
Walnut caterpillar		

Observe bee caution.

Repeat applications as necessary up to a total of 4 times per crop (including any applications at the dormant or delayed dormant timing) but not more often than once every 7 days. Use lower rates for pests attacking leaves. Use higher rates for pests attacking fruit and for higher infestations. For scale control, apply when crawlers are present.

For peach twig borer, best results with foliar applications have been found by making applications in 'popcorn' or petal fall stages when the May brood begins to hatch.

For navel orangeworm in almonds and walnuts, best results have been found by timing early and midseason applications to correspond with moth flight peaks. For tilbert leafroller, best results have been found by making applications when eggs are hatching, repeating application on first appearance of moths and again 3 to 4 weeks later.

For codling moth in walnuts, best results have been found by making applications when average cross-sectional diameters of developing butts are 0.5-0.75 inches and again during middle or late June as needed.

Pest	Pounds per acre	Acres treated
Chestnut weevil	5 – 6.25	0.25 –
European earwig		0.2

For chestnut weevil, best results have been found with 4 applications at weekly intervals beginning in late July. The last application should be made prior to shuck split.

For European earwig, thorough cover age of trunks, branches and nuts is needed for best results.

ALMONDS

Pest	Pounds per acre	Acres treated
Peach twig borer	5 – 6.25	0.25 –
Scale insects		0.2

For dormant or delayed dormant timing, apply in combination with recommended dormant oil. Refer to the dormant oil product label for additional use directions and restrictions.

ORNAMENTAL TREES

Roses, flowers, other herbaceous plants, woody plants, shrubs in commercial and residential areas and in nursery production areas)

Pest	Pounds per acre	Acres treated
Ants	1.25	1.0
Apple aphid		
Armyworm		
Ash whitefly		
Azalea leafminer		
Bagworms		
Balsam twig aphid		
Birch leafminer		
Blister beetle		
Boxelder bug		
Boxwood leafminer		
Brown tail moth		
Catalpa sphinx		
Chiggers		
Cooley spruce Gall adelgrid		
Cutworm		
Cypress tip moth		
Douglas-fir tussock moth		
Eastern spruce gall adelgrid		
Elm leaf aphid		
Elm leaf beetle		
Eriophyrid mites		
European pine shoot moth		
Maple leafcutter		
Mealy bugs		
Mimosa webworm		
Nantucket pine tip moth		
Oak leafminer		
Oak moth		
Oak seletonizer		
Oakworm complex		
Oleander caterpillar		
Olive ash borer		
Orange-striped oakworm		
Periodical cicada		
Pine looper		
Pine sawfly		
Pine spittlebug		
Pitch pine tip moth		
Spruce budworm		
Plant bugs		
Poinsettia hornworm		
Psyllids		
Puss caterpillar		
Redhumped oakworm		
Rose aphid		
Rose chafer		

Observe plant response precautions. Obtain thorough coverage of upper and lower leaf surfaces. The addition of a sticker may improve residual control. To control scale insects, treat trunks, stems and twigs in addition to plant foliage. For optimum worm control, treat when pests are small. Do not use on syrup-producing sugar maples where sap is harvested. Applications for control of maple leafcutter on sugar maple should be

made when larvae are in 2nd instar after mining and as cases are being formed. Repeat treatments as necessary up to a total of 6 times per year but not more often than once every 7 days. For gypsy moth control, use the higher rate for heavy infestations.

Pest	Pounds per acre	Acres treated
Fall armywrom	1.25	1.0
Flea beetle		
Fuschia gall mite		
Fuller rose beetle		
Glassy winged sharpshooter		
Gall midges		
Gall wasps		
Greenstriped mapleworm		
Grasshoppers		
Hackberry nipplegall maker		
Holly bud moth		
Holly leafminer		
Jackcpine budworm		
Japanese beetle		
Jeffrey pine needleminder		
June beetle		
Lace bugs		
Leafhoppers		
Leafrollers		
Locust borer		
Rose slug		
Saddled prominent		
Sawflies (exposed)		
Scale insects (crawlers)		
Sowbugs		
Spiney elm caterpillar		
Springtails		
Spruce needleminer		
Subtropical pine tip moth		
Tent caterpillars		
Thorn bug		
Thrips (exposed)		
Ticks		
Walnut caterpillar		
Webworms		
Western spruce budworm		
Willow leaf beetles		
Wooly gail aphid		
Yellow Poplar weevil		

Observe plant response precautions. Obtain thorough coverage of upper and lower leaf surfaces. The addition of a sticker may improve residual control. To control scale insects, treat trunks, stems and twigs in addition to plant foliage. Do not use on syrup-producing sugar maples where sap is harvested. Applications for control of maple leafcutter on sugar maple should be made when larvae are in 2nd instar after mining and as cases are being formed.

Repeat treatments as necessary up to a total of 6 times per year but not more often than once every 7 days. Observe plant response precautions. Obtain thorough coverage of upper and lower leaf surfaces. For optimum worm control, treat when pests are small. For gypsy moth control, use the higher rate for heavy infestations.

Pest	Pounds per acre	Acres treated
Elm bark beetle Ips engraver beetles Muntain pine beetle Roundheaded pine beetle Pruce beetle Western pine beetle	2% solution	See specific directions

Direct trunk treatment: Effective as a preventative treatment only. Repeat annually as required to prevent beetle attacks.

Apply 1 gallon of spray per 50 square feet of bark prior to beetle flight or host-tree attack. Treat tree trunk from ground level up until trunk diameter is less than 5 inches.

For elm bark beetle: apply approximately 20-30 gallons of spray mixture for each 50 feet of elm tree for thorough coverage of all bark surfaces on trunks, limbs and twigs.

Do not make more than 2 applications per year or repeat applications more often than once every six months.

TURFGRASS

(Golf grass, sports fields, sod farms, domestic and commercial lawns, cemeteries, parks, campsites, recreational areas)

Pest	Pounds per acre	Acres treated
Ants Armyworm Centipedes Chiggers Cutworms Earwigs Essex skipper European chafer Fall armyworm Fiery skipper Grasshoppers Green June beetle larvae Leafhoppers Lucerne moth Millipedes Mosquitoes (adults) Scarab beetle adults (May beetle, June beetle, Japanese beetle, green June beetle) Sow bugs Spittlebugs Springtails Ticks Yellowstriped armyworm	2.5 - 5	11000 - 22000

For Armyworm, cutworm and fall armyworm control: Do not irrigate treated areas within 24 hours following insecticide application.

For Green June Beetle Grub (larvae) control: Make applications when grubs are feeding near the soil surface. Water or irrigate turfgrass soon after treatment.

Repeat applications as necessary up to a total of 4 times per year but not more often than once every 7 days

Pest	Pounds per acre	Acres treated
Chinch bugs Sod webworm (lawn moths)	7.5 - 10	5000 - 7000
Blue grass billbug larvae European crane fly Fleas White grubs (Japanese beetle, chafer beetle, and Phyllophaga spp. Larvae) Black turfgrass ataenius beetle larvae Hyperoides weevil (bluegrass weevil) larvae	10	5000

For Chinch bug control: Treat entire grass area rather than just damaged areas. Irrigation prior to treatment will aid in penetration of insecticide into turfgrass. Do not irrigate treated areas within 24 hours following insecticide application.

For European crane fly control: Treatments should be applied in early spring or as recommended by local Agricultural Extension Service agents. Water or irrigate turf grass soon after treatment.

For white grub control: Applications should be made when grubs are feeding near the soil surface, usually during late March through May, or July through early September, or as recommended by local Agricultural Extension Service agents. Water or irrigate turfgrass soon after treatment. Repeat applications as necessary up to 2 times per year but not more often than once every 7 days.

VEGETABLES

(Broccoli, brussel sprouts, cauliflower, abbage, chinese cabbage, collards, kale, Kohirabi, mustard greens)

Pest	Pounds per acre	Acres treated
Flea beetles Harlequin bug Leafhoppers	0.6 – 1.25	1.8 – 1.0
Armyworm Aster leafhopper Corn earworm Diamondback moth Fall armyworm Imported cabbageworm Lygus bugs Spittle bugs Stink bugs Tarnished plant bug	1.25 – 2.5	1.0 – 0.5

Repeat applications as needed up to a total of 4 times but not more often than once every 7 days.

FRUITING VEGETABLES

(Tomatoes, peppers, eggplant)

Pest	Pounds per acre	Acres treated
Colorado potato beetle European corn borer Fall armyworm Lace bugs Stinkbugs (suppression) Tarnished plant bug Thrips (suppression) Tomato fruitworm Tomato hornworm Tomato pinworm	1.25 – 2.5	1.0 – 0.5
Flea beetles Leafhoppers	0.6 – 1.25	1.8 – 1.0

Repeat applications as necessary up to a total of 7 times but not more often than once every 7 days. Thorough coverage is essential to effectively suppress stink bugs. When disease transmission is suspected, monitor fields following application and retreat if reinfestation occurs once every 7 days.

Pest	Pounds per acre	Acres treated
Cutworms	2.5	0.5

Rice Bugs - Carbaryl WP (0.75 kg a.i./ha = 0.88 l PLUNGE/ha)

- Management options:
 - Remove weeds from fields and surrounding areas
 - Level fields and apply fertilizer evenly to encourage synchronous development of rice
 - Collect rice bugs with nets before flowering stage
 - Attract rice bugs to traps baited with spoiled fish, decaying meat, or chicken manure

Do not apply insecticides before the economic threshold is reached (Economic threshold levels: > 1 bug/2 hills at pre-flowering spikelet to flowering stage). It is normally not necessary to spray for rice bugs. If spraying is deemed necessary then it should be done in the early morning or late evening when rice bugs are in the canopy.

For More Details including effects on environment email contact@ivorychem.com

with Subject "PLUNGE 85 WP DETAILS"

More Details:

TOXICOLOGICAL EFFECTS

- **Acute toxicity:** Carbaryl is moderately to very toxic. It can produce adverse effects in humans by skin contact, inhalation, or ingestion. The symptoms of acute toxicity are typical of the other carbamates. Direct contact of the skin or eyes with moderate levels of this pesticide can cause burns. Inhalation or ingestion of very large amounts can be toxic to the nervous and respiratory systems resulting in nausea, stomach cramps, diarrhea, and excessive salivation. Other symptoms at high doses include sweating, blurring of vision, incoordination, and convulsions. The only documented fatality from carbaryl was through intentional ingestion. The oral LD50 of carbaryl ranges from 250 mg/kg to 850 mg/kg in rats, and from 100 mg/kg to 650 mg/kg in mice [8,24]. The inhalation LC50 in rats is greater than 200 mg/L [24]. Low doses can cause minor skin and eye irritation in rabbits, a species in which carbaryl's dermal LD50 has been measured at greater than 2000 mg/kg [8].
- **Chronic toxicity:** Not Available
- **Reproductive effects:** No reproductive or fetal effects were observed during a long-term study of rats fed high doses of carbaryl [8].
- **Teratogenic effects:** The evidence for teratogenic effects due to chronic exposure is minimal in test animals. Birth defects in rabbit and guinea pig offspring occurred only at dosage levels that were highly toxic to the mother [25].
- **Mutagenic effects:** Carbaryl has been shown to affect cell division and chromosomes in rats [24]. However, numerous studies indicate that carbaryl poses only a slight mutagenic risk [8,26]. There is a possibility that carbaryl may react in the human stomach to form a more mutagenic compound, but this has not been demonstrated. In sum, the evidence suggests that carbaryl is unlikely to be mutagenic to humans [26,27].
- **Carcinogenic effects:** Technical-grade carbaryl has not caused tumors in long-term and lifetime studies of mice and rats. Rats were administered high daily doses of the pesticide for 2 years, and mice for 18 months, with no signs of carcinogenicity [28]. While N-nitrosocarbaryl, a possible by-product, has been shown to be carcinogenic in rats at high doses, this product has not been detected. Thus, the evidence indicates that carbaryl is unlikely to be carcinogenic to humans [29].
- **Organ toxicity:** Ingestion of carbaryl affects the lungs, kidneys, and liver. Inhalation will

also affect the lungs [5,30]. Nerve damage can occur after administration of high doses for 50 days in rats and pigs [18]. Several studies indicate that carbaryl can affect the immune system in animals and insects. Male volunteers who consumed low doses of carbaryl for 6 weeks did not show symptoms, but tests indicate slight changes in their body chemistry [8]. A 2-year study with rats revealed no effects at or below a dose of 10 mg/kg/day [25].

- **Fate in humans and animals:** Most animals, including humans, readily break down carbaryl and rapidly excrete it in the urine and feces. Workers occupationally exposed by inhalation to carbaryl dust excreted 74% of the inhaled dose in the urine in the form of a breakdown product [24]. The metabolism of up to 85% of carbaryl occurs within 24 hours after administration [24]

ECOLOGICAL EFFECTS

- **Effects on birds:** Carbaryl is practically nontoxic to wild bird species. The LD50 values are greater than 2000 mg/kg in mallards and pheasants, 2230 mg/kg in quail, and 1000 to 3000 mg/kg in pigeons [10].
- **Effects on aquatic organisms:** Carbaryl is moderately toxic to aquatic organisms, such as rainbow trout (LC50 of 1.3 mg/L), and bluegill (LC50 of 10 mg/L) [10]. Some accumulation of carbaryl can occur in catfish, crawfish, and snails, as well as in algae and duckweed. Residue levels in fish were 140-fold greater than the concentration of carbaryl in water. In general, due to its rapid metabolism and rapid degradation, carbaryl should not pose a significant bioaccumulation risk in alkaline waters. However, under conditions below neutrality, it may be significant [10].
- **Effects on other organisms:** Carbaryl is lethal to many non-target insects, including bees and beneficial insects [10].

ENVIRONMENTAL FATE

- **Breakdown in soil and groundwater:** Carbaryl has a low persistence in soil. Degradation of carbaryl in the soil is mostly due to sunlight and bacterial action. It is bound by organic matter and can be transported in soil runoff. Carbaryl has a half-life of 7 to 14 days in sandy loam soil and 14 to 28 days in clay loam soil. Carbaryl has been detected in groundwater in three separate cases in California [14].
- **Breakdown in water:** In surface water, carbaryl is broken down by bacteria and through hydrolysis. Evaporation is very slow. Carbaryl has a half-life of about 10 days at neutral pH. The half-life varies greatly with water acidity [14].
- **Breakdown in vegetation:** Degradation of

carbaryl in crops occurs by hydrolysis inside the plants. It has a short residual life of less than 2 weeks. The metabolites of carbaryl have lower toxicity to humans than carbaryl itself. The breakdown of this substance is strongly dependent on acidity and temperature [8].

PHYSICAL PROPERTIES AND GUIDELINES

Physical Properties:

- **Appearance:** Carbaryl is a solid that varies from colorless to white or gray, depending on the purity of the compound. The crystals are odorless. Carbaryl is stable to heat, light, and acids. It is not stable under alkaline conditions. It is noncorrosive to metals, packaging materials, and application equipment.
- **Chemical Name:** 1-naphthyl methylcarbamate [10]
- **CAS Number:** 63-25-2
- **Molecular Weight:** 201.23
- **Water Solubility:** 40 mg/L @ 30 C [10]
- **Solubility in Other Solvents:** dimethylformaldehyde v.s.; acetone s.; dimethyl sulfoxide v.s.; cyclohexanone s. [10]
- **Melting Point:** 142 C [10]
- **Vapor Pressure:** <5.3 mPa @ 25 C [10]
- **Partition Coefficient:** Not Available
- **Adsorption Coefficient:** 300 [10]



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