



STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
BOARD OF PESTICIDES CONTROL
 28 STATE HOUSE STATION
 AUGUSTA, MAINE 04333

JANET T. MILLS
GOVERNOR

To: Board of Pesticides Control Members
 From: Mary Tomlinson, Pesticides Registrar/Water Quality Specialist
 RE: Extension of EPA SLN ME-170002 Loveland Malathion 8 Aquamul, EPA Reg. No. 34704-474, for use at a higher rate on blueberries to control spotted wing drosophila (SWD)
 Date: January 4, 2018

Dr. David Yarborough, Wild Blueberry Specialist at the University of Maine Cooperative Extension is requesting the SLN approved in 2017 be extended to 2023.

The request to approve an extension for SLN ME-170002 Malathion 8 Aquamul, EPA Reg. No. 34704-474, manufactured by Loveland Products, Inc., is based on economic considerations. The product is reported to be less expensive than the Gowan brand, thus, reducing costs to Maine growers. The SLN is for the same rate as Gowan SLN ME-130001. Under Maine law, when two pesticides meet the requirements, the Board may not demonstrate preference for one over the other.

Enclosed are supporting documents for your consideration to extend the SLNs through December 31, 2023. Please let me know if you have any questions.

- Letters of request from David Yarborough, Wild Blueberry Specialist, Maine Cooperative Extension
- Letter of support from Tonya Dumas, Loveland Products Inc
- Draft Loveland Malathion 8 Aquamul SLN label
- Loveland Malathion 8 Aquamul Section 3 label
- Loveland Malathion 8 Aquamul SDS

MEGAN PATTERSON, DIRECTOR
 32 BLOSSOM LANE, MARQUARDT BUILDING



PHONE: (207) 287-2731
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Wild Blueberry Office Deering Hall University of Maine, Orono 04469

October 24, 2018

Mary E. Tomlinson
Pesticide Registrar/Water Quality Specialist
Maine Board of Pesticides Control
28 State House Station
Augusta, ME 04333

Dear Mary:

The BPC Board needs to renew the State of Maine 24(c) label for MALATHION 8 AQUAMUL with the higher use rates for spotted wing drosophila, as this is the approach that we need to take to control it in our wild blueberry fields in Maine. This pest continues to be a serious threat, so it is essential that we have the insecticides available with different modes of action to rotate in order to prevent pesticide resistance from occurring. The Loveland product has the advantage of being less expensive than the competitor, so its registration also provides an economic advantage for this additional cost of production. This is especially critical in this time of low prices to the grower and so will enable Maine blueberry growers to remain economically competitive with Canadian and cultivated blueberries.

I request that the Board of Pesticides control renew the State of Maine 24(c) label for MALATHION 8 AQUAMUL for control of the spotted wing drosophila in blueberries in Maine for 2018. I have provided a request to the Loveland Company on behalf of the wild blueberry growers in Maine.

Sincerely,

David Yarborough PhD
Wild Blueberry Specialist
Professor of Horticulture
the University of Maine
5722 Deering Hall Rm. 414
Orono, ME 04469-5722

Phone: [207-581-2923](tel:207-581-2923)
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One of Maine's public universities

Published and distributed in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, by the University of Maine and the U.S Department of Agriculture cooperating. Cooperative Extension and other agencies of the U.S.D.A. provide equal opportunities in programs and employment



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January 4, 2019

Mary E. Tomlinson
Pesticide Registrar/Water Quality Specialist
Maine Board of Pesticides Control
28 State House Section
Augusta, ME 04333

Subject: EPA Reg No 34704-474-Malathion 8 Aquamul

Dear Ms. Tomlinson,

Please find enclosed an application for a 24c for Malathion Aquamul for the control of Spotted Wing Drosophila on Blueberries. Loveland is submitting this application per the request of the Cooperative Extension and Blueberry growers in Maine.

Loveland Products, Inc. and Main Blueberry Growers request approval of this request as soon as possible. Thank you for your cooperation. Should you have any questions, or need additional documents, please contact me at 970-685-3558 or email me at tonya.dumas@nutrien.com.

Sincerely

A handwritten signature in blue ink that reads "Tonya Dumas".

Tonya Dumas
Senior Advisor
Loveland Products, Inc.
PO Box 1286
Greeley, CO 80632
Phone: (970)685-3558
Email: tonya.dumas@nutrien.com

FIFRA SECTION 24(c) SPECIAL LOCAL NEED (SLN) LABEL
FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF MAINE

MALATHION 8 AQUAMUL
Loveland Products, Inc.

EPA REG. NO. 34704-474

EPA SLN NO. ME-170002

This label expires and must not be distributed or used after _____, 20__.

DIRECTIONS FOR USE

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

This SLN label and the EPA registered product label must be in the possession of user at the time of pesticide application.

Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on this Special Local Need (SLN) and on the EPA-registered label for Malathion 8 Aquamul (EPA Reg. No. 34704-474).

BLUEBERRIES

Pests controlled	Rate in pt/A (lb ai/A)	Directions	Pre-Harvest Interval (PHI)
Spotted Wing Drosophila	Up to 2.5 (2.5)	<ul style="list-style-type: none">• The maximum application rate is 2.5 lbs AI/A (2.5 pts /A Malathion 8 Aquamul); and the maximum number of applications per year is 2.• Do not exceed a total maximum use rate of malathion from all sources of 5.0 lbs AI/A per season.• The minimum retreatment interval is 7 days.• The Restricted Entry Interval (REI) is 12 hrs.	1 Day

IMPORTANT: This product is sold subject to the Conditions of Sale and Warranty and Liability Limitations set forth on the container label.

SLN Registrant:
Loveland Products, Inc.
PO Box 1286
Greeley, CO 80632-1286





MALATHION 8 AQUAMUL

Organophosphate Insecticide

FOR INSECT CONTROL ON LISTED ORNAMENTALS, FRUIT AND NUT TREES
AND VEGETABLE PLANTS.

ACTIVE INGREDIENT:	% BY WT.
Malathion (O,O-Dimethyl phosphorodithioate of diethyl mercaptosuccinate)	81.8%
OTHER INGREDIENTS:	<u>18.2%</u>
	TOTAL 100.0%

Contains 8.0 pounds of Malathion per gallon.

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

For Additional Precautionary Statements, Complete First Aid, Directions for Use, Storage
and Disposal and Other Use Information, See Inside This Label Booklet.

EPA REG. NO. 34704-474

120815 V1D 01Y16

FORMULATED FOR
LOVELAND PRODUCTS, INC.®, P.O. BOX 1286, GREELEY, COLORADO 80632-1286

PEEL FILM HERE ↑

EPA EST. NO. 34704-MS-002



NET CONTENTS 2.5 GAL (9.46 L)



GROUP 1 B INSECTICIDE

MALATHION 8 AQUAMUL

Organophosphate Insecticide

**FOR INSECT CONTROL ON LISTED ORNAMENTALS, FRUIT AND NUT TREES
AND VEGETABLE PLANTS.**

ACTIVE INGREDIENT:	% BY WT.
Malathion (O,O-Dimethyl phosphorodithioate of diethyl mercaptosuccinate)	81.8%
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**For Additional Precautionary Statements, Complete First Aid, Directions for Use, Storage
and Disposal and Other Use Information, See Inside This Label Booklet.**

EPA REG. NO. 34704-474

120815 V1D 01Y16

FORMULATED FOR
LOVELAND PRODUCTS, INC.®, P.O. BOX 1286, GREELEY, COLORADO 80632-1286

FIRST AID	
If swallowed:	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have a person sip a glass of water if able to swallow. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
If in eyes:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 to 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 inhaled:	<ul style="list-style-type: none"> • 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.
If on skin or clothing:	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
<p>NOTE TO PHYSICIAN: This product may cause cholinesterase inhibition. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine.</p> <p>FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565.</p> <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS CAUTION

Harmful if swallowed, inhaled, or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist or vapor. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile rubber, and viton. If you want more options, follow the instructions for category (F) on an EPA chemical resistance category selection chart.

For all formulations and all use patterns – mixers, loaders, applicators, flaggers, and other handlers must wear:

- Long sleeved shirt and long pants,
- Shoes plus socks,
- Chemical resistant gloves made of barrier laminate or butyl rubber, nitrile rubber, or viton \geq 14 mils.

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

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. See engineering controls for additional requirements.

ENGINEERING CONTROLS

Pilots must use an enclosed cockpit in a manner that is consistent with the WPS for Agricultural Pesticides [40 CFR 170.240(d)(6)]. Pilots must wear the PPE required on this labeling for applicators.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- 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 pesticide is toxic to aquatic organisms, including fish and invertebrates. This product may contaminate water through drift of spray in wind. This product has a high potential for runoff after application. Use care when applying in or to an area which is adjacent to any body of water, and do not apply when weather conditions favor drift from target area. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

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 when disposing of equipment washwater or rinsate. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. **Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.**

For commercial, industrial, and institutional use products packaged in containers equal or greater than 5.0 gallons or 50.0 pounds:

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame. This product is incompatible with other chemicals (e.g. oxidizing agents).

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

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 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 (REI). 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). The REI for each crop is listed in the directions for use associated with each crop.

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,
- Shoes plus socks,
- Chemical-resistant gloves made of any waterproof material.

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, or nurseries.

Do not enter or allow others to enter until sprays have dried.

PRECAUTIONS AND RESTRICTIONS

BUFFER ZONES FOR AERIAL APPLICATION: When making a non-ULV application with aerial application equipment, a minimum buffer zone of 25 feet must be maintained along any water body.

SPRAY DRIFT REQUIREMENTS

Observe the following requirements when spraying in the vicinity of aquatic areas such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish ponds.

Droplet Size – Use the largest droplet size consistent with acceptable efficacy. Formation of very small droplets may be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.

For groundboom and aerial applications, use only medium or coarser spray nozzles according to ASAE (S572) definition for standard nozzles, or a volume mean diameter (VMD) of 300 microns or greater for spinning atomizer nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

Wind Direction and Speed – Make aerial or ground applications when the wind velocity favors on target product deposition (approximately 3 to 10 mph). Do not apply when wind velocity exceeds 15 mph. Avoid applications when wind gusts approach 15 mph. For all non-aerial applications, wind speed must be measured adjacent to the application site on the upwind side, immediately prior to application. **Temperature Inversion** – Do not make aerial or ground applications into areas of temperature inversions.

Inversions are characterized by stable air and increasing temperatures with increasing distance above the ground. Mist or fog may indicate the presence of an inversion in humid areas. Where permissible by local regulations, the applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

Additional Requirements for Ground Applications – Spray should be released at the lowest height consistent with pest control and flight safety. Applications more than 10 feet above the crop canopy should be avoided. For groundboom applications, apply with nozzle height no more than 4 feet above the ground or crop canopy.

Additional Requirements for Aerial Applications – For aerial applications, the spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of wing span or 90% rotor diameter.

Aerial applicators must consider flight speed and nozzle orientation in determining droplet size.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

APPLICATION THROUGH IRRIGATION SYSTEMS – CHEMIGATION

Apply this product only through sprinkler, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move; flood (basin); furrow; border or drip (trickle) irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

Do not connect an irrigation system used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Mix in clean supply tank the recommended amount of this product for acreage to be covered, and needed quantity of water.

Do not tank mix this product with other pesticides, surfactants or fertilizers unless prior use has shown the combination noninjurious under your conditions of use.

Follow precautionary statements and directions for all tank-mixed products.

On all crops, use sufficient gallonage of water to obtain thorough and uniform coverage, but not cause runoff or excessive leaching. This will vary depending on equipment, pest problem and stage of crop growth. Application of more or less than optimal quantity of water may result in decreased chemical performance, crop injury or illegal pesticide residues.

Meter this product into the irrigation water uniformly during the period of operation. Do not overlap application. Follow specified label rates, application timing, and other directions and precautions for crop being treated.

Continuous mild agitation of pesticide mixture may be needed to assure a uniform application, particularly if the supply tank requires a number of hours to empty.

CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

Note: Loveland Products, Inc. does not encourage connecting chemigation systems to public water supplies. The following information is provided for users who have diligently considered all other application and water supply options before electing to make such a connection.

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

SPRINKLER CHEMIGATION (FOLIAR SPRAY USES)

The system must contain a functional check valve vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from

the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

FLOOD (BASIN), FURROW AND BORDER CHEMIGATION (SOIL DRENCH USES)

Systems using a gravity flow pesticide dispensing system must meter the pesticide into the water at the head of the field and downstream of a hydraulic discontinuity such as a drop structure or weir box to decrease potential for water source contamination from backflow if water flow stops.

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:

- a. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
- b. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- c. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- d. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- e. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- f. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

DRIP (TRICKLE) CHEMIGATION (SOIL DRENCH USES)

The system must contain a functional check valve, vacuum relief valve and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

APPLICATIONS

Use rates and use directions as noted below. Use higher rate when foliage is heavy or infestation is severe. Apply when pests first appear. Apply the following specified rates in sufficient water to thoroughly cover 1 acre. By ground, apply using a minimum of 10.0 gallons of water per acre and by air apply using a minimum of 2.0 gallons of water per acre (standard is 100 gallons of water for thorough coverage sprays). Do not apply orchard rates in less than 10.0 gallons of water per acre.

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Alfalfa Birdsfoot Trefoil Clover Lespedeza Vetch	Aphids Armyworm Clover leaf weevil Grasshoppers Leafhopper Spider mites	1.25	Apply to alfalfa in bloom only in the evening or early morning when bees are not working in the fields or are not hanging on the outside of hives. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications is 2/ cutting; and the minimum retreatment interval is 14 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	0
Apricots	Aphids Codling moth Orange tortrix Soft brown scale Terrapin scale	1.5	Full coverage spray. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	6
Asparagus	Asparagus beetle Thrips	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	1
Avocados	Green house thrips Latania scale Omnivorous looper Orange tortrix Soft brown scale	4.0 to 4.7	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 4.7 lbs A/A (4.7 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 30 days. Do not apply more than a total of 9.4 lbs of malathion per acre per calendar year.	7
Barley	Aphids Cereal leaf beetle Grasshoppers Greenbugs	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Beets (Garden) Do not apply to Sugar Beets	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Blackberries Boysenberries Dewberries Gooseberries Loganberries Raspberries	Aphids Rose scale Japanese beetle Leafhoppers Mites Thrips	2.0 1.0 to 2.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	1
Blueberries	Cherry fruitworm Cranberry fruitworm Japanese beetle Plum curculio Sharpnose leafhopper	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	1

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Broccoli Broccoli Raab (Rapini) Brussels Sprouts Cauliflower Chinese Broccoli Cavalo Broccolo Mizuna Mustard Spinach Rape Greens	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	2
Cabbage	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 6; and the minimum retreatment interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	7
Cabbage, Chinese (Bok Choy, Napa) Cabbage Chinese Mustard	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Carrots, roots	Aphids Leafhoppers	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Celery	Aphids Spider mites	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Cherries (sweet & tart)	Black cherry aphid Bud moth Cherry fruit fly Forbes scale Fruit tree leafroller Lesser peach tree borer San jose scale	1.75	May injure foliage of varieties such as Brooks, Tulare, Coral and some others. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.75 lbs A/A (1.75 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 3 days. Do not apply more than a total of 7.0 lbs of malathion per acre per calendar year.	3
Chestnuts	Mites	2.0 to 2.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.5 lbs A/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	2
Citrus (Grapefruit, Lemons, Limes, Oranges, Tangerines, Tangelos)	Aphids Black scale California red scale Citricola scale Florida red & Mediterranean fruit fly Purple scale Soft scale Thrips Yellow scale	CA: 7.5 pts or 1.5 pts; All other states: 4.5 pts or 1.5 pts	Do not apply during full bloom. California Only: At the maximum application rate of 7.5 lbs A/A (7.5 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 72 hrs and the maximum number of applications/year is 1; OR at the maximum application rate of 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul) the REI is 24 hrs, the maximum number of applications/year is 3, the minimum application interval is 30 days and the minimum preharvest interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year. All States other than CA: At the maximum application rate of 4.5 lbs A/A (4.5 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 72 hrs and the maximum number of applications/year is 1; OR at the maximum application rate of 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul) the REI is 12 hrs, the maximum number of applications/year is 3, the minimum application interval is 30 days and the minimum preharvest interval is 7 days. Do not apply more than a total of 4.5 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Collards	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Corn (field)	Aphids Cereal leaf beetle Corn earworm Corn rootworm-adults Grasshoppers Sap beetle Thrips	1.0	For corn earworm, apply to silks as soon as they appear. The Restricted Entry Interval (REI) is 72 hrs for detasseling, and 12 hrs for all other activities. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Corn, Sweet	Japanese beetles	1.0	The Restricted Entry Interval (REI) is 72 hrs for detasseling, and 12 hrs for all other activities. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 5 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	5
Cotton	Aphids Boll weevil Cotton leaf perforator Cotton leafworm Fall armyworm Fleahopper Garden webworm Grasshopper Leafhoppers Lygus bug Mites Thrips White Flies	1.5 to 2.5	The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 2.5 lbs A/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	7
Cucumbers	Aphids Pickworm Spider mites Thrips Cucumber beetle	1.0 to 1.75 1.75	Do not apply unless plants are dry. The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.75 lbs A/A (1.75 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.5 lbs of malathion per acre per calendar year.	1
Currants	Currant aphid Imported currantworm Japanese beetle Mites	1.25 1.0 to 1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	1
Dandelions	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Eggplant	Aphids Spider mite Lace bugs	0.75 to 1.56 1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 5 days. Do not apply more than a total of 6.24 lbs of malathion per acre per calendar year.	3

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Endive	Aphids Mites	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Figs	Dried fruit beetle Vinegar flies	2.0 pts plus 2.0 gals unsulfurized molasses as a bait spray	At the maximum application rate of 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 24 hrs. The maximum number of applications/year is 2, and the minimum application interval is 5 days; OR at the maximum application rate of 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 12 hrs. The maximum number of applications/year is 2, and the minimum application interval is 5 days. Do not apply more than a total of 4.0 lbs of malathion per acre per calendar year.	5
Flax	Grasshoppers	0.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.5 lb A/A (0.5 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 1.5 lbs of malathion per acre per calendar year.	52
Garlic	Aphids Thrips	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 4.68 lbs of malathion per acre per calendar year.	3
Grapes	Drosophila Japanese beetle Leafhopper Mealybugs Spider mite Terrapin scale	1.88	May cause injury to foliage on some varieties. The Restricted Entry Interval (REI) is 72 hrs for girdling and tying, and 24 hrs for all other activities. The maximum application rate is 1.88 lbs A/A (1.88 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 14 days. Do not apply more than a total of 3.76 lbs of malathion per acre per calendar year.	3
Grass Hay Grasses	Aphids Armyworms Grasshoppers Leafhoppers	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 1. Do not apply more than a total of 1.25 lbs of malathion per acre per calendar year.	0
Guava	Fruit flies	0.75 pt + 1.0 lb partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 13; and the minimum retreatment interval is 3 days. Do not apply more than a total of 16.25 lbs of malathion per acre per calendar year.	2
Hops	Aphids	0.63	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.63 lb A/A (0.63 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 1.89 lbs of malathion per acre per calendar year.	10
Horseradish	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Kale	Aphids Cabbage looper Flea Beetle Imported cabbageworm	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Kohlrabi	Aphids Cabbage looper Flea Beetle Imported cabbageworm	1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Kumquats	Aphids Black scale California red scale Citricola scale Florida red scale Florida purple scale Soft scale Thrips Yellow scale Mediterranean fruit fly	4.5 1.0 to 4.5	Do not apply during full bloom. The Restricted Entry Interval (REI) is 48 hrs. The maximum application rate is 4.5 lbs A/A (4.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 1; and the minimum retreatment interval is 30 days. Do not apply more than a total of 4.5 lbs of malathion per acre per calendar year.	7
Leeks	Aphids Thrips	1.0 to 1.56	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.12 lbs of malathion per acre per calendar year.	3
Lettuce	Aphids Leafhoppers Cabbage looper Mites	1.25 to 1.88 1.88	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.88 lbs A/A (1.88 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 6 days for head and 5 days for leaf. Do not apply more than a total of 3.76 lbs of malathion per acre per calendar year.	14
Macadamia Nuts	Green stink bug	0.94	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.94 lb A/A (0.94 pt Malathion 8 Aquamul); the maximum number of applications/year is 6; and the minimum retreatment interval is 7 days. Do not apply more than a total of 5.64 lbs of malathion per acre per calendar year.	1
Mango	Fruit flies	0.75 pt + 1.0 lb partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.9375 lb A/A (0.9375 pt Malathion 8 Aquamul); the maximum number of applications/year is 10; and the minimum retreatment interval is 7 days. Do not apply more than a total of 9.375 lbs of malathion per acre per calendar year.	1
Melons (other than watermelon)	Aphids Cucumber beetle Pickworm Spider mites Thrips	1.0	Do not apply unless plants are dry. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	1
Mustard Greens	Aphids Cabbage looper Flea beetle Imported cabbageworm	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Nectarines	Aphids (Black cherry, Black peach, Green peach, Rusty plum) Japanese beetle Mites (European red, Two-spotted)	2.5 to 3.0	Full coverage spray. The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 3.0 lbs A/A (3.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 9.0 lbs of malathion per acre per calendar year.	7
	Cottony peach scale Lesser peach tree borer Oriental fruit moth Plum curculio Terrapin scale	3.0		
Oats	Aphids Cereal leaf beetle Grasshoppers Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Okra	Aphids Japanese beetle	1.2	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.2 lbs A/A (1.2 pts Malathion 8 Aquamul); the maximum number of applications/year is 5; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	1
Onions (bulb and green)	Onion thrips	1.0 to 1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.12 lbs of malathion per acre per calendar year.	3
	Onion maggots	1.56		
Papaya	Aphids Mealybugs	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 8; and the minimum retreatment interval is 3 days. Do not apply more than a total of 10.0 lbs of malathion per acre per calendar year.	1
Parsley	Aphids	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.5 lbs A/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Parsnips	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Passion Fruit	Fruit flies	0.75 pt + 1.0 lb partially hydrolyzed yeast protein or enzymatic yeast hydrolyzate	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 8; and the minimum retreatment interval is 7 days. Do not apply more than a total of 8.0 lbs of malathion per acre per calendar year.	3

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Peaches	Aphids (Green peach, Black cherry, Black peach, Rusty plum) Japanese beetle Mites (European red, Two-spotted)	2.5 to 3.0	Full coverage spray. The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 3.0 lbs A/A (3.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 11 days. Do not apply more than a total of 9.0 lbs of malathion per acre per calendar year.	7
	Cottony peach scale Lesser peach tree borer Oriental fruit moth Plum curculio Terrapin scale	3.0		
Peas	Aphids Pea weevil	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	3
Pecans	Aphids Mites Pecan bud moth Pecan leaf casebearer Pecan nut casebearer Pecan phylloxera	2.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.5 lbs A/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 5.0 lbs of malathion per acre per calendar year.	7
Peppers	Aphids	0.75 to 1.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 5 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	3
	Pepper maggots	1.5		
Peppermint Spearmint	Aphids Flea beetle - adults Leafhoppers Spider mites	0.94	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 0.94 lb A/A (0.94 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.82 lbs of malathion per acre per calendar year.	7
Pineapples	Mealybugs	2.0	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	7
Potatoes	Aphids False chinch bugs Leafhoppers Mealybugs	1.0 to 1.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	0
Pumpkins	Aphids Cucumber beetle Pickleworms Spider mites Thrips	1.0	Do not apply unless plants are dry. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	1
Radishes	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Rice	Rice leafminers Rice stink bugs	1.25	Broadcast use only over intermittently flooded areas. Application may not be made around bodies of water where fish or shellfish are grown and/or harvested commercially. The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.5 lbs of malathion per acre per calendar year.	7
Rutabagas	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Rye	Aphids Cereal leaf beetles Grasshoppers Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	7
Salsify (including tops)	Aphids	1.0 to 1.25	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.25 lbs A/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	7
Shallots	Aphids Thrips	1.0 to 1.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.56 lbs A/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	3
Sorghum, Grain	Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Spinach	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7
Squash	Aphids Cucumber beetles Pickleworms Spider mites Thrips	Summer: 1.75; Winter: 1.0	Do not apply unless plants are dry. For Summer Squash , the Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 1.75 lbs A/A (1.75 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 5.25 lbs of malathion per acre per calendar year. For Winter Squash , the Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb A/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.0 lbs of malathion per acre per calendar year.	1
Strawberries	Aphids Field crickets Lygus bugs Potato leafhoppers Spider mites Spittle bugs Strawberry leafroller Strawberry root weevil Thrips Whitely	1.0 to 2.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 2.0 lbs A/A (2.0 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 7 days. Do not apply more than a total of 8.0 lbs of malathion per acre per calendar year.	3

Crop	Pest	Rate Pts/A	Directions	Pre-Harvest Interval (PHI) (days)
Sweet Potatoes	Leafhoppers	1.0 to 1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs AI/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 3.12 lbs of malathion per acre per calendar year.	0
	Leafminers, morningglory	1.56		
Swiss Chard	Aphids	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb AI/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	14
Tomatoes	Aphids	1.0 to 1.56	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.56 lbs AI/A (1.56 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 5 days. Do not apply more than a total of 6.24 lbs of malathion per acre per calendar year.	1
	Spider mites Armyworms Drosophila Fruit worms Tomato russet mites	1.56		
Turnips	Aphids Cabbage loopers Flea beetles Imported cabbageworms	1.25	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.25 lbs AI/A (1.25 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 5 days for greens and 7 days for roots. Do not apply more than a total of 3.75 lbs of malathion per acre per calendar year.	1
Walnuts	Aphids Mites Walnut husk fly	2.5	The Restricted Entry Interval (REI) is 24 hrs. The maximum application rate is 2.5 lbs AI/A (2.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 3; and the minimum retreatment interval is 7. Do not apply more than a total of 7.5 lbs of malathion per acre per calendar year.	7
Watercress	Aphids	1.0 to 1.25	At the maximum application rate of 1.25 lbs AI/A (1.25 pts Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 24 hrs. The maximum number of applications/year is 5, and the minimum application interval is 3 days; OR at the maximum application rate of 1.0 lb AI/A (1.0 pt Malathion 8 Aquamul), the Restricted Entry Interval (REI) is 12 hrs. The maximum number of applications/year is 5, and the minimum application interval is 3 days. Do not apply more than a total of 6.25 lbs of malathion per acre per calendar year.	3
Watermelon	Aphids Cucumber beetle Leafhopper Pickworms Spider mites	1.5	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.5 lbs AI/A (1.5 pts Malathion 8 Aquamul); the maximum number of applications/year is 4; and the minimum retreatment interval is 7 days. Do not apply more than a total of 6.0 lbs of malathion per acre per calendar year.	1
Wheat (spring & summer)	Aphids Cereal leaf beetles Grasshoppers Greenbugs	1.0	The Restricted Entry Interval (REI) is 12 hrs. The maximum application rate is 1.0 lb AI/A (1.0 pt Malathion 8 Aquamul); the maximum number of applications/year is 2; and the minimum retreatment interval is 7 days. Do not apply more than a total of 2.0 lbs of malathion per acre per calendar year.	7

OUTDOOR ORNAMENTALS

Precaution: Before treating a large number of ornamental plants with Malathion 8 Aquamul alone or as a tank mixture with any other material, make a test application on a few plants and observe 7 to 10 days prior to treating large areas to reduce the possibility of plant injury.

Crop	Rate	Pests	Comments
Ornamental Herbaceous Plants Ornamental and/or Shade Trees Ornamental Woody Shrubs	1.0 pt in 100 gals of water as a dilute spray	Aphids Euonymus scales European pine shoot moth Four-lined leaf bug Japanese beetle adults Lace scale Mealybugs Millipedes Oyster shell scale Potato leafhopper Rose leafhopper Scurfy scale Spider mites Springtails Sowbugs Tarnished plant bug Thrips Whiteflies	IMPORTANT: Avoid use on certain ferns including Boston, Maidenhair and Pteris, as well as some species of Crassula and Canaetri Juniper. For Oyster shell, Fletch, Juniper, Oak kermes and Pine needle scales, apply when scale crawlers have settled on foliage. The Restricted Entry Interval (REI) is 12 hrs. Maximum of 2 applications/year/growing cycle; 10 day minimum retreatment interval; maximum single application rate 2.5 lbs AI/100 gals.
	1.25 pts in 100 gals of water as a dilute spray	Azalea scale Bagworm Birch leafminer Boxwood leafminer Fletch scale Florida-red scale Juniper scale Magnolia scale Oak kermes Pine leaf scale Tent caterpillar	
	1.6 pts in 100 gals of water	Black scale crawler Monterey pine scale	
	2.5 pts in 100 gals of water	Pine needle scale Wax scale	
Slash Pine Pine Seed Orchards and Christmas Tree Plantations	For ground application, mix 3.2 pts of Malathion 8 Aquamul in 100 gals of water	European pine sawfly Slash pine flower thrips	Apply 6.0 pts of the mixture/tree on the smallest flowering trees. Mist blowers or airblast sprays may be used. The Restricted Entry Interval (REI) is 12 hrs. Maximum of 2 applications/year/ growing cycle; 10 day minimum retreatment interval; maximum single application rate 3.2 lbs AI/100 gals.
	For air application, mix 3.2 pts of Malathion 8 Aquamul in at least 10.0 gals of water		Apply a minimum of 5.0 gals of mixture/acre. Make 2 applications, the first when female flowers are in twig bud stage, the second one week prior to maximum flower receptivity to pollen.

SMALL GRAIN STORAGE FACILITIES (Grain Elevators/Silos)

Only for use in storage facilities being prepared to store corn, wheat, rye, oats, and barley grain. For a residual wall, floor, and machinery spray in grain elevators/silos prior to loading grain, apply 5.0 pints per 25.0 gallons of water making thorough application. Before applying spray, clean grain elevators/silos thoroughly. Remove and burn all sweeping as debris. Do not apply directly to grain. REI = 12 hours. The maximum single application rate is 0.6 pound active ingredient per 1000 square feet. The maximum number of applications is 1 per storage period.

FLY CONTROL

Amount of Spray	Amount Malathion 8 Aquamul	Directions for Use
1.0 gal	1.2 fl oz	For use around the lower foundation of homes and as a spot treatment only on yards. Apply spray at rate of 1.0 gal/1000 sq ft on painted surfaces and 2.0 gals/1000 sq ft on unpainted surfaces where flies alight or congregate.
10.0 gals	12.0 fl oz	
100 gals	7.5 pts	

For Bait Sprays - add the following sugar or unsulfurized molasses/corn syrup.

Amount of Spray	Amount of Sugar	Amount of Unsulfurized Molasses/ Corn Syrup
1.0 gal	0.5 cup	4.0 fl oz
10.0 gals	2.0 lbs	26.0 fl oz
100 gals	20.0 lbs	2.0 gals

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Malathion 8 Aquamul should be stored in the original unopened container in a secure, dry place. Do not contaminate with other pesticides or fertilizers. The product should never be heated above 55 °C (131 °F), and should not be stored for long periods of time at a temperature in excess of 25 °C (77 °F). Store in a cool, dry, well-ventilated area. Store separately from strong alkalis and strong oxidizers. Keep container tightly closed when not in use.

PESTICIDE DISPOSAL: To avoid wastes, use all material in this container by application according to label directions. If wastes cannot be avoided, offer remaining product to a waste disposal facility or pesticide disposal program (often such programs are run by state or local governments or by industry).

CONTAINER DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

For containers up to 5 gallons: 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 ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a 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.

For containers greater than 5 gallons or 50 pounds: Triple rinse as follows: 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. Turn the container over onto its other 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. If not recycled, then puncture and dispose of in a sanitary landfill. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

For refillable containers: Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container.

Storage & Disposal cont'd.:

Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

For help with any spill, leak, fire or exposure involving this material, call day or night CHEMTREC – 1-800-424-9300.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY BEFORE BUYING OR USING THIS PRODUCT.

read the entire Directions for Use and the following Conditions of Sale and Limitation of Warranty and Liability. By buying or using this product, the buyer or user accepts the following Conditions of Sale and Limitation of Warranty and Liability, which no employee or agent of LOVELAND PRODUCTS, INC. or the seller is authorized to vary in any way.

Follow the Directions for Use of this product carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop or other plant injury, ineffectiveness, or other unintended consequences may result from such risks as weather or crop conditions, mixture with other chemicals not specifically identified in this product's label, or use of this product contrary to the label instructions, all of which are beyond the control of LOVELAND PRODUCTS, INC. and the seller. The buyer or user of this product assumes all such inherent risks.

Subject to the foregoing inherent risks, LOVELAND PRODUCTS, INC. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use when the product is used in strict accordance with such Directions for Use under normal conditions of use. EXCEPT AS WARRANTED IN THIS LABEL AND TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THIS PRODUCT IS SOLD "AS IS," AND LOVELAND PRODUCTS, INC. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ELIGIBILITY OF THIS PRODUCT FOR ANY PARTICULAR TRADE USAGE.

IN THE UNLIKELY EVENT THAT BUYER OR USER BELIEVES THAT LOVELAND PRODUCTS, INC. HAS BREACHED A WARRANTY CONTAINED IN THIS LABEL AND TO THE EXTENT REQUIRED BY APPLICABLE LAW, BUYER OR USER MUST SEND WRITTEN NOTICE OF ITS CLAIM TO THE FOLLOWING ADDRESS: LOVELAND PRODUCTS, INC., ATTENTION: LAW DEPARTMENT, P.O. BOX 1286, GREELEY, CO 80632-1286.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE BUYER'S OR USER'S EXCLUSIVE REMEDY FOR ANY INJURY, LOSS, OR DAMAGE RESULTING FROM THE HANDLING OR USE OF THIS PRODUCT, INCLUDING BUT NOT LIMITED TO CLAIMS OF BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORTS, SHALL BE LIMITED TO ONE OF THE FOLLOWING, AT THE ELECTION OF LOVELAND PRODUCTS, INC. OR THE SELLER: DIRECT DAMAGES NOT EXCEEDING THE PURCHASE PRICE OF THE PRODUCT OR REPLACEMENT OF THE PRODUCT. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, LOVELAND PRODUCTS, INC. AND THE SELLER SHALL NOT BE LIABLE TO THE BUYER OR USER OF THIS PRODUCT FOR ANY CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES, OR DAMAGES IN THE NATURE OF A PENALTY.

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

1.1 PRODUCT IDENTIFIER:

TRADE NAME: MALATHION 8 AQUAMUL

1.2 RECOMMENDED USE: GROUP 1B INSECTICIDE – FOR INSECT CONTROL

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

Acute Toxicity - Oral	Category 4	H302
Acute Toxicity - Dermal	Category 4	H312
Sensitization – Skin	Category 1	H317
Eye Damage/Irritation	Category 2B	H320
Acute Toxicity – Inhalation	Category 4	H332
Specific Target Organ Toxicity (Single Exposure)	Category 2	H371
Specific Target Organ Toxicity (Repeated Exposure)	Category 2	H373
Aquatic Toxicity	Category 2	H401
Combustible Liquid	Category 4	H227

2.2 Label elements



Signal word: **WARNING**

Hazard Statement: H302 – Harmful if swallowed.
H312 – Harmful in contact with skin.
H317 – May cause an allergic skin reaction.
H320 – Causes eye irritation.
H332 – Harmful if inhaled.
H371 – May cause damage to organs.
H373 – May cause damage to organs through prolonged or repeated exposure.
H401 – Toxic to aquatic life.
H227 – Combustible liquid.

Precautionary Statement: P260 – Do not breathe dust/fume/gas/mist/vapors/spray.
P262 – Do not get in eyes, on skin, or on clothing.
P264 – Wash thoroughly after handling.
(Prevention): P270 – Do not eat, drink or smoke when using this product.
P280 – Wear protective gloves/eye protection/face protection.
P210 – Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P102 – Keep out of reach of children.



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Precautionary Statement:

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 – Rinse mouth.

P302+P312: IF ON SKIN: Call a POISON CENTER or doctor/physician if you feel unwell.

P352 – Wash with soap and water.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

(Response):

P101 – If medical advice is needed, have the product container or label at hand.

P362 – Take off contaminated clothing and wash before reuse.

P333+P313 – If skin irritation or rash occurs: Get medical advice/attention.

P337 – If eye irritation persists: Get medical advice/attention.

P363 – Wash contaminated clothing before reuse.

P370 – In case of fire: Use dry chemical, carbon dioxide, foam, water spray or fog to extinguish.

P391 – Collect spillage.

Precautionary Statement:

(Storage):

P403+P235 – Store in a well-ventilated place. Keep cool.

2.3 Other hazards

Cholinesterase inhibitor.

3. COMPOSITION, INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Classification	Concentration [%]
Malathion	121-75-5	Oral tox. 4; H302 Dermal tox. 4; H312 Sens. Skin. 1; H317	81.80
*Other ingredients	n/a	Eye Dam/Irrit. 2B; H320 Inh. tox. 4; H332 STOT-SE 2; H371 STOT-RE 2; H373 Aquatic tox. 2; H401	18.20

*Ingredients not specifically listed are non-hazardous or are to be considered proprietary or confidential business information per 29 CFR 1910.1200(i)

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

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 swallowed:

Call a 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 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 mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.



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4.2 Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Eyes: Causes eye irritation.
Oral: Harmful if swallowed.
Dermal: Harmful in contact with skin.

4.3 Immediate Medical Attention and Special Treatment

Treatment: Treat symptomatically. Symptoms may be delayed.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565

Take container, label or product name with you when seeking medical attention.

NOTES TO PHYSICIAN: This product may cause cholinesterase inhibition. Atropine is antidotal. 2-PAM may be effective as an adjunct to atropine.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Use medium appropriate to surrounding fire. Dry chemical, carbon dioxide (CO₂), alcohol foam, foam, water spray or fog.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: Product will decompose rapidly when heated to temperatures at or over 280°F (140°C). Release of volatile, toxic compounds such as dimethyl sulfide, sulfur dioxide, carbon monoxide, and phosphorus pentoxide are possible.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions:

This pesticide is toxic to aquatic organisms, including fish and invertebrates. This product may contaminate water through drift of spray in wind. This product has a high potential for runoff after application. Use care when applying in or to an area which is adjacent to any body of water, and do not apply when weather conditions favor drift from target area. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. 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 when disposing of equipment washwater or rinsate. To protect the environment, do not allow pesticide to enter or run off into storm drains, drainage ditches, gutters or surface waters.

This pesticide is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up:

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to Remove residual contamination.

Never return spills to original containers for re-use.



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7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING:

Advice on Safe Handling:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing 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.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers:

Product should be stored in the original unopened container in a secure dry place. Do not contaminate other pesticides or fertilizers. Product should never be heated above 55°C (131°F), and should not be stored for long periods of time at temperatures in excess of 25°C (77°F). Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS:

OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
Malathion	TLV	1 mg/m ³ (IFV: Measured as inhalable fraction and vapor)
	TLV	

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
Malathion	TLV	15 mg/m ³ (Total dust), Skin

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
Acetylcholinesterase Inhibiting Pesticides	70% of individual's baseline	Cholinesterase activity in red blood cells

8.2 EXPOSURE CONTROLS:

Engineering Measures

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and spray mists. Provide eyewash station and safety shower.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Long-sleeved shirt and long pants. Chemical-resistant gloves. Shoes plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment such as MSHA/NIOSH TC-84A with NIOSH equipped N, R, or P class filter media. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.



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9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE :	Liquid
ODOR:	Mild petroleum.
ODOR THRESHOLD:	No data available.
COLOR:	Straw to amber-colored.
pH:	3.69 (10% v/v)
MELTING POINT / FREEZING POINT:	No data available
BOILING POINT:	No data available
FLASH POINT:	198.5°F/ 92.5°C (TCC).
FLAMMABILITY (solid, gas):	No data available.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	No data available.
VAPOR PRESSURE:	No data available.
SOLUBILITY:	Soluble.
PARTITION CO-EFFICIENT, n-OCTANOL / WATER:	No data available.
AUTO-IGNITION TEMPERATURE:	No data available.
DECOMPOSITION TEMPERATURE:	No data available.
VISCOSITY:	No data available.
SPECIFIC GRAVITY (Water = 1):	1.19 g/ml
DENSITY:	9.89 lbs./gal / 1.19 kg/L

Note: These physical data are typical values based on material tested but may vary from sample to sample.
Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

Stable

10.2 CHEMICAL STABILITY

Stable under normal temperature conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No data available. Will not polymerize.

10.4 CONDITIONS TO AVOID

Keep away from heat or flame.

10.5 INCOMPATIBLE MATERIALS

Strong bases and oxidizers. This product can corrode iron, steel, tin plate and copper. Rapidly hydrolyzed at pH >7.0

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Volatile, toxic compounds such as dimethyl sulfide, sulfur dioxide, carbon monoxide, and phosphorus pentoxide may be released in a fire situation.

11 TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE

Eye contact. Skin absorption. Skin contact. Inhalation.

LC₅₀ (rat): > 5.1 mg/L (4 HR)

LD₅₀ Oral (rat): > 550 mg/kg

LD₅₀ Dermal (rat): > 2,000 mg/kg

Acute Toxicity Estimates: No data available

Skin Irritation (rabbit): Mild irritant.

Eye Irritation (rabbit): Causes moderate eye irritation.

Specific Target Organ Toxicity: Eyes, skin, respiratory system, liver, blood cholinesterase, CNS, CVS, GI tract.

Aspiration: No data available.

Skin Sensitization (guinea pig): Sensitizer

Carcinogenicity: ACGIH TLV-A4 (Not Classifiable as a Human Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans).

Germ Cell Mutagenicity: No data available

Interactive Effects: None known



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12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY

The product is toxic to fish and aquatic invertebrates. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Information below is based on the technical ingredient Malathion.

Ecotoxicological Data

	Species	Test Results
Malathion	Oncorhynchus mykiss	0.18 mg/L – 96-hour LC ₅₀
	Daphnia magna	0.72 µg/L – 96-hour EC ₅₀
	Bees	0.38 µg/bee – LD ₅₀ acute oral
	Bees	0.27 µg/bee – LD ₅₀ topical

Drift or runoff may adversely affect non-target plants.

Do not apply directly to water.

Do not contaminate water when disposing of equipment wash water.

Do not apply when weather conditions favor drift from target area.

12.2 PERSISTENCE AND DEGRADABILITY

Biodegradability: Malathion is biodegradable but does not fulfill criteria for being readily biodegradable.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Bioconcentration potential is low (BCF 95).

12.4 MOBILITY IN SOIL

Malathion is of medium mobility in soil under normal conditions, but degrades rapidly.

12.5 OTHER ADVERSE EFFECTS

Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at <http://www.acrecycle.org>. Do not contaminate water, food or feed by storage or disposal.

14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

DOT Shipping Description: 12.5 GALLONS AND LESS: NOT REGULATED BY DOT

DOT Shipping Description: GREATER THAN 12.5 GALLONS: RQ UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (MALATHION), 9, III ERG GUIDE 171

U.S. Surface Freight Classification: INSECTICIDES, INSECT REPELLENTS, NOI, OTHER THAN POISON (NMFC 102120, CLASS: 60)



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15 REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS

NFPA & HMIS Hazard Ratings:

NFPA		HMIS	
2	Health	0	Least
2	Flammability	1	Slight
0	Instability	2	Moderate
		3	High
		4	Severe

SARA Hazard Notification/Reporting

SARA Title III Hazard Category:	Immediate	<u>Y</u>	Fire	<u>N</u>	Sudden Release of Pressure	<u>N</u>
	Delayed	<u>Y</u>	Reactive	<u>N</u>		

Reportable Quantity (RQ) under U.S. CERCLA: Malathion (CAS: 121-75-5) 100 pounds.

SARA, Title III, Section 313: Malathion (CAS: 121-75-5) 81.8%.

RCRA Waste Code: Not listed.

CA Proposition 65: **WARNING:** This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm..

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

CAUTION

Harmful if swallowed, inhaled, or absorbed through skin.

Causes moderate eye irritation

Avoid contact with skin, eyes, or clothing.

Avoid breathing spray mist or vapor.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

16 OTHER INFORMATION

SDS STATUS: Section 15 revised.

PREPARED BY: Registrations and Regulatory Affairs

REVIEWED BY: Environmental Health and Safety

EPA REG. NO.: 34704-474

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