

2018-1099  
2018-07-13

Paper sachet label

## SALMOSAN<sup>®</sup> VET

**Acaricide**

**RESTRICTED**

ACTIVE INGREDIENT: Azamethiphos.....49.8%

NET CONTENTS: 20 grams *or* 100 grams

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION POISON**



**POTENTIAL SKIN SENSITIZER**

Box label

# SALMOSAN<sup>®</sup> VET

## Acaricide

Wettable Powder (WP) Insecticide for the Control of Sea Lice on Atlantic Salmon Reared in Marine Aquaculture Sites.

NET CONTENTS: 2x 100 grams or 5 x 20 grams

ACTIVE INGREDIENT: Azamethiphos..... 49.8%

### RESTRICTED

**PRODUCT MUST BE APPLIED BY A PROVINCIALY CERTIFIED AND TRAINED APPLICATOR**

**READ LABEL AND ENTIRE BOOKLET BEFORE USING**

**KEEP OUT OF THE REACH OF CHILDREN**

**DO NOT SELL INDIVIDUAL WATER SOLUBLE BAGS SEPARATELY**

**CAUTION POISON**



**POTENTIAL SKIN SENSITIZER**

**TOXIC TO AQUATIC ORGANISMS**

REGISTRATION No : 32506  
PEST CONTROL PRODUCTS ACT

Batch Number:

Use Before:

Manufacturer : Benchmark Animal Health Limited  
Technology Sciences Group (TSG) Canada Inc., 49-3278 Colonel Talbot Rd, London ON N6P 1H4  
Tel 519-203-3056

**NOTICE TO USER:** This pest control product is to be used only in accordance with the directions on the label. It is an offense under the *Pest Control Products Act* to use this product in a way that it is inconsistent with the directions on the label.

**NATURE OF RESTRICTION:** Only to be applied by individuals who are provincially certified and trained in the application of this product and who hold a pesticide applicator certificate or license recognized by the provincial/territorial pesticide regulatory agency where the application occurs. This product is to be used only in the manner authorized. Consult local pesticide regulatory authorities about use permits which may be required.

**RESTRICTED USES:** For control of sea lice on farmed Atlantic salmon.

**DIRECTIONS FOR USE:** Refer to booklet for complete application directions.

Method and route of administration: Sea lice treatment should be performed in a fully enclosed treatment unit (fully enclosed treatment well boat or sea cage with a full enclosure tarpaulin).

For all treatment application methods a minimum 7 day reapplication interval between treatments applies.

DO NOT treat within 48 hours of slaughter.

When using the tarped treatment method in combination with 150 meter polar radius net pens, DO NOT treat more than two net pens per aquaculture farm site per day

DO NOT treat more than 2 tarped net pens simultaneously.

DO NOT apply to tarped net pens in water depths of 10 meters or less.

DO NOT flush treatment water from a well boat with a 45 degree or 90 degree angled flushing pipe in water depths of 20 meters or less.

In areas where the water depth varies considerably due to tidal fluctuations, the minimum water depth is determined at the time of treatment.

For net pen treatments (tarped):

DO NOT use within 1 km of any active lobster holding facilities which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, when the ebb or flow of the tide or the prevailing current is anticipated to be moving in the direction of a lobster holding facility within 2 hours from the start of the treatment.

For well boat:

DO NOT discharge well boat treatment water within 1 km of any active lobster holding facilities which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, when the ebb or flow of the tide or the prevailing current is anticipated to be moving in the direction of a lobster holding facility within 2 hours from the start of the treatment.

When the treatment site is NOT within 1km of an active lobster holding facility, which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, treatment should be performed at outgoing tide or during periods with a local outgoing current.

When the treatment site is NOT within 1km of an active lobster holding facility, which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, treatment should be performed at outgoing tide or during periods with a local outgoing current.

Please refer to leaflet for application rates.

Treatment duration: 30-60 minutes. The treatment period for water temperatures below 10°C is up to 60 minutes; for water temperatures above 10°C it is advisable to limit to 30 minutes.

SALMOSAN VET inside this pouch is in a water soluble bag. Each water soluble bag contains 100 grams of SALMOSAN VET. Do not touch water soluble bags with wet gloves as they will dissolve. Do not open water soluble bags. The water soluble bag should be dropped straight into the mixing container. Store above freezing in a dry location. Prolonged storage at temperatures below 0°C may cause the water soluble bag to become brittle.

Refer to and retain booklet for complete use directions.

#### **FIRST AID:**

- IF SWALLOWED:** Call a poison control centre 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 a poison control centre or doctor. Do not give anything by mouth to an unconscious person.
- IF ON SKIN/CLOTHING** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
- 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 the eye. Call a poison control centre 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 centre or doctor for further treatment advice.

**Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.**

#### **PRECAUTIONS:**

**KEEP OUT OF REACH OF CHILDREN.**

Harmful if swallowed or inhaled. Avoid inhalation of dust. Potential skin sensitizer. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Accidental splashes on exposed skin or eyes should be washed off immediately with plenty of water. Wash hands, face and exposed skin before eating, drinking or smoking and after leaving the work area. Wash all protective clothing thoroughly after use, especially the inside of gloves. When handling the product, diluting, mixing, loading and applying, and cleaning-up, wear chemical-resistant coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves (heavy duty gauntlet style nitrile at least 300 mm in length and 0.5 mm thick), chemical-resistant footwear and socks and face protection (face shield). For well boat uses, all workers participating in mixing, loading, fish monitoring, clean-up or repair activities must wear suitable protective equipment (as described above). Replace protective clothing and gloves regularly and certainly

when cracking or damage has occurred. Store in the original unopened packaging in a well ventilated room. Store in a dry place. Protect from sun and humidity. Avoid contamination of food, feed and domestic water supplies.

DO NOT enter or allow worker entry into water at treated fish farm sites during the restricted entry interval (REI) of 6 hours after all treatments are completed. In sites where divers may be necessary, commercial divers/diver management is required.

It is also recommended that recreational activities in treated water near fish farm areas are not permitted until post treatment tidal flushing occurs.

#### **ENVIRONMENTAL PRECAUTIONS:**

TOXIC to aquatic organisms. Apply only to tarped net pens or to dosing tanks in well boats.

#### **DISPOSAL:**

1. Make the empty pouch unsuitable for further use.
2. Dispose of the pouch in accordance with the provincial requirements.
3. For information on the disposal of unused, unwanted product, and the cleanup of spills, contact the Provincial Regulatory Agency.

**TOXICOLOGICAL INFORMATION:** Azamethiphos is an organophosphate that is a cholinesterase inhibitor. Typical symptoms of overexposure to cholinesterase inhibitors include headache, nausea, dizziness, sweating, salivation, runny nose and eyes. This may progress to muscle twitching, weakness, tremor, incoordination, vomiting, abdominal cramps and diarrhea in more serious poisonings. A life-threatening poisoning is signified by loss of consciousness, incontinence, convulsions and respiratory depression with a secondary cardiovascular component. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate degree of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as pralidoxime chloride, may be therapeutic if used early; however, use only in conjunction with atropine. In cases of severe acute poisoning, use antidotes immediately after establishing an open airway and respiration. With oral exposure, the decision of whether to induce vomiting or not should be made by an attending physician.

Leaflet

## SALMOSAN<sup>®</sup> VET

Wettable Powder (WP) Insecticide for the Control of Sea Lice on Atlantic Salmon Reared in Marine Aquaculture Sites

NET CONTENTS: 5 x 20 grams *or* 2 x 100 grams

ACTIVE INGREDIENTS: Azamethiphos.....49.8%

### **RESTRICTED**

**PRODUCT MUST BE APPLIED BY A PROVINCIALY CERTIFIED AND TRAINED APPLICATOR**

**READ LABEL AND ENTIRE BOOKLET BEFORE USING**

**KEEP OUT OF REACH OF CHILDREN**

**CAUTION POISON**



**POTENTIAL SKIN SENSITIZER**

**TOXIC TO AQUATIC ORGANISMS**

REGISTRATION NO: 32506  
PEST CONTROL PRODUCTS ACT

**DO NOT SELL THE WATER SOLUBLE BAGS INDIVIDUALLY**

Manufacturer: Benchmark Animal Health Limited

Technology Sciences Group (TSG) Canada Inc.  
49-3278 Colonel Talbot Rd  
London ON N6P 1H4  
Tel: 519-203-3056

**NOTICE TO USER:** This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

**NATURE OF RESTRICTION:** It is recommended to consult with a veterinarian before applying SALMOSAN VET. Only to be applied by individuals who are provincially certified and trained in the application of this product and who hold a pesticide applicator certificate of license recognized by the provincial/territorial pesticide regulatory agency where the application occurs. This product is to be used only in the manner authorized. Consult local pesticide regulatory authorities about use permits which may be required.

**RESTRICTED USES:** For control of sea lice on farmed Atlantic salmon.

**DIRECTIONS FOR USE:**

**DO NOT** contaminate aquatic habitats by cleaning of equipment or disposal of wastes.

This product is to be used only in the manner authorized; consult provincial pesticide regulatory authorities about use permits that may be required.

**General Information:** SALMOSAN VET should be applied to salmon infested with mature (pre-adult) sea lice (*Lepeophtheitus salmonis* or *Caligus elongatus*) before the state at which serious skin damage is evident. Mortality may occur where fish are severely stressed or injured. The exact timing of a treatment program is a matter of expertise and judgement; operators must seek the advice of the prescribing fish veterinarian.

Do not use SALMOSAN VET prophylactically. Use only when infestation has been diagnosed.

**Threshold Limit for Sea Lice:** Treatment is considered necessary when in individual fish pens a total of 40-100 pre-adult or adult lice or a total of 5 gravid females are present on a 20 fish sample.

**Timing of application:** SALMOSAN VET does not affect juvenile attached sea lice including most chalimus stages which may be present with the pre-adult and adult stages. These juvenile stages will develop into pre-adults and adults in 10 to 20 days, when a population should show whether a second treatment is necessary. Re-treatment will depend on the monitoring of fish pens and whether the sea lice exceed the Threshold Limit. Do not treat within 48 hours of slaughter. Maximum 10 applications may be applied to a fish over its life cycle, with a minimum 7 day reapplication interval between treatments.

**Note:** Oxygenation must be provided during treatment. Vigorous oxygenation is recommended in the treatment cage. Where several cages are to be treated a large reservoir of oxygen bottles should be available. During treatment, careful observation of fish behaviour must be maintained. If signs of distress, e.g. fish falling on their sides, occur, remove tarpaulin and ensure vigorous oxygenation of the water.

**Note:** At water temperatures above 10°C, it is advisable to limit treatment periods to 30 minutes.

### **Bath Treatment (Sea Cage with Full Enclosure Tarpaulin Method)**

When using the tarped treatment method in combination with 150 meter polar radius net pens, DO NOT treat more than two net pens per aquaculture farm site per day

DO NOT treat more than 2 tarped net pens simultaneously.

DO NOT apply to tarped net pens at water depths of 10 meters or less.

DO NOT use within 1 km of any active lobster holding facilities which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, when the ebb or flow of the tide or the prevailing current is anticipated to be moving in the direction of a lobster holding facility within 2 hours from the start of the treatment.

In areas where the water depth varies considerably due to tidal fluctuations, the minimum water depth is determined at the time of treatment.

When the treatment site is NOT within 1 km of an active lobster holding facility, which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, treatment should be performed at outgoing tide or during periods with a local outgoing current.

#### **Instructions For Use:**

The pen size, numbers of fish, age and size of the fish and depth of DRY UP (amount of water in the pen using a tarpaulin to reduce water volume) can affect the amount of SALMOSAN VET needed to treat each pen. Timing for best treatment should consider tidal movements (flushing rates) at the site which could affect dispersal of SALMOSAN VET once the tarpaulins are removed. Prior to treatment, operators wearing suitable equipment and protective clothing (See PRECAUTIONS) should pre-mix the required number of water soluble bags of SALMOSAN VET into a mixing container containing a minimum of 50 litres of seawater to ensure the soluble bags dissolve. Ensure adequate agitation during application. If treatment is not conducted immediately after the initial dilution is made, re-suspension is necessary. Screw the lid tightly onto the container and gently shake this initial dilution for up to 5 minutes. When the fish are ready to be treated, the diluted suspension of SALMOSAN VET should be immediately and carefully added to the cage by pouring or pumping the mixture slowly into the water to avoid splashing at the oxygen diffuser points using:

#### **The Bath Technique:**

In this technique, the depth of the fish cage net is reduced to a known depth at the centre, e.g. 6 metres and a tarpaulin placed around the net so that it is totally enclosed. Ensure the base of the cage is not drooping when in the raised position as fish may congregate and come to harm. Oxygen is immediately bled into the system and diluted SALMOSAN VET is added. After 30-60 minutes the tarpaulin is removed. Use an oxygen meter throughout treatment period. The amount of oxygen to be used in individual pens will be the responsibility of the certified applicator based on the site conditions as described above.

#### **Application Rate for a Sea Cage with Full Enclosure Tarpaulin:**

20 grams of Salmosan VET will treat 100 m<sup>3</sup> of water.

100 grams of Salmosan VET will treat 500 m<sup>3</sup> of water.



The following chart is to be used as a guide only and is representative of commonly encountered aquaculture sea cage configurations and treatment conditions.

Size and shape of Sea Cage	Dry up Depth (Meters)	Volume of Water (Cubic Meters)	Application amount of SALMOSAN VET
12 m square	4	576 m <sup>3</sup>	120 g
50 m polar circle	4	796 m <sup>3</sup>	160 g
70 m polar circle	4	1560 m <sup>3</sup>	320 g
80 m polar circle	4	2037 m <sup>3</sup>	420 g
90 m polar circle	4	2578 m <sup>3</sup>	520 g
100 m polar circle	4	3183 m <sup>3</sup>	640 g
120 m polar circle	4	4584 m <sup>3</sup>	920 g
150 m polar circle	4	7162 m <sup>3</sup>	1440 g
12 m square	6	864 m <sup>3</sup>	180 g
50 m polar circle	6	1194 m <sup>3</sup>	240 g
70 m polar circle	6	2340 m <sup>3</sup>	460 g
80 m polar circle	6	3056 m <sup>3</sup>	600 g
90 m polar circle	6	3867 m <sup>3</sup>	780 g
100 m polar circle	6	4775 m <sup>3</sup>	960 g
120 m polar circle	6	6875 m <sup>3</sup>	1380 g
150 m polar circle	6	10743 m <sup>3</sup>	2140 g

Figures reflect volume DRY UP to ½ pen volume in Bath Treatment, one needs to take in consideration: pen size, numbers of fish, age of the fish and amount to DRY UP.

**Wellboat Treatment Method:**

DO NOT flush treatment water from a well boat with a 45 degree or 90 degree angled flushing pipe in water depths of 20 meters or less.

In areas where the water depth varies considerably due to tidal fluctuations, the minimum water depth is determined at the time of treatment.

DO NOT discharge well boat treatment water within 1 km of any active lobster holding facilities which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, when the ebb or flow of the tide or the prevailing current is anticipated to be moving in the direction of a lobster holding facility within 2 hours from the start of the treatment.

When the treatment site is NOT within 1 km of an active lobster holding facility, which include active licensed lobster pounds and/or lobster tank houses as well as lobster cars/crates held within a designated harbour authority water lot, well boat discharge should be performed at outgoing tide or during periods with a local outgoing current.

Equipment required:

Protective equipment (see PRECAUTIONS)  
Labelled screw-topped wide mouth polyethylene container  
Salmosan VET powder (request 20 gram packages)  
Distilled Water  
Dry preparation area

**Application Rate for well boat treatment:**

20 grams of Salmosan VET will treat 80 - 105 m<sup>3</sup> of water.

The following chart is to be used as a guide only and is representative of commonly encountered aquaculture well boat sizes.

Size of Well	Grams of Salmosan VET
240 m <sup>3</sup> – 315 m <sup>3</sup>	60 g
320 m <sup>3</sup> – 420 m <sup>3</sup>	80 g

**For well boat uses, all workers participating in mixing, loading, fish monitoring, clean-up or repair activities in association with Salmosan VET application must wear suitable protective equipment as described in the PRECAUTIONS section.**

Dissolving the Salmosan VET:

Place the required number of water soluble bags of Salmosan VET in accordance with the application rate above and based on the volume of water in the well boat to be treated into the labelled container together with ONE litre of distilled water. Screw the lid tightly onto the container & gently shake this initial dilution for up to 5 minutes.

Diluting the Salmosan VET prior to treatment:

The diluted Salmosan VET solution should be further diluted into approximately 500 litres of clean freshwater in the dosing tank & gently stirred for 5 minutes. The labelled container should be rinsed out with distilled water & emptied into the dosing tank.

**Treatment:**

**Ensure sufficient oxygenation of the well water prior to addition of Salmosan VET bearing in mind that oxygen levels will decline during the treatment. Oxygenation should be maintained throughout treatment & must never be allowed to fall below 7mg/litres.**

Introduce the diluted Salmosan VET from the dosing tank into the relevant well.

Treatment Period:

At water temperatures below 10°C: up to 60 minutes

At water temperatures above 10°C: it is advisable to limit treatment periods to 30 minutes

If fish show signs of distress (fish losing equilibrium & falling on their sides) the treatment should be terminated immediately.

The dosing tank should be thoroughly rinsed with clean freshwater once all the Salmosan VET treatments have been completed.

A maximum of 10 applications may be applied to a fish over its life cycle, with a minimum 7 day reapplication interval between treatments. For use with a fully enclosed treatment well boat, a maximum of three net-pens may be treated per aquaculture farm site per day.

SALMOSAN VET is packed in 20 gram or 100 gram water soluble bags. Each water soluble bag is packed individually in a pouch. A carton contains 5 x 20 gram pouches or 2 x 100 gram pouches.

Do not touch water soluble bags with wet gloves as they will dissolve. Do not open water soluble bags. The water soluble bag should be dropped straight into the mixing container. Store above freezing in a dry location. Prolonged storage at temperatures below 0°C may cause the water soluble bag to become brittle.

### **FIRST AID**

- IF SWALLOWED** Call a poison control centre or a doctor for advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or a doctor. Do not give anything by mouth to an unconscious person.
- IF ON SKIN/CLOTHING** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.
- 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 five minutes, then continue rinsing the eye. Call a poison control centre or a doctor for treatment advice.
- IF INHALED** Move person to fresh air. If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control centre or doctor for further treatment advice.

**Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.**

### **PRECAUTIONS:**

#### **KEEP OUT OF REACH OF CHILDREN**

Harmful if swallowed or inhaled. Avoid inhalation of dust. Potential skin sensitizer. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Accidental splashes on exposed skin or eyes should be washed off immediately with plenty of water. Wash hands, face and exposed skin before eating, drinking or smoking, and after leaving the work area. Wash all protective clothing thoroughly after use, especially the inside of gloves. When handling the product, diluting, mixing, loading and applying, and cleaning-up, wear chemical-resistant coveralls over a long-sleeved shirt and long pants, chemical-resistant gloves (heavy duty gauntlet style nitrile at least 300 mm in length and 0.5 mm thick), chemical-resistant footwear and socks and face protection (face shield). For wellboat uses, all workers participating in the mixing, loading, fish monitoring, clean-up or repair activities must wear suitable protective equipment (as

described above). Replace protective clothing and gloves regularly and certainly when cracking or damage has occurred. Store in the original, unopened packaging in a well-ventilated room. Store in a dry place. Protect from sun and humidity. Avoid contamination of food, feed and domestic water supplies.

DO NOT enter or allow worker entry into water at treated fish farm sites during the restricted entry interval (REI) of 6 hours after all treatments are completed. In sites where divers may be necessary, commercial divers/diver management is required.

It is also recommended that recreational activities in treated water near fish farm areas are not permitted until post treatment tidal flushing occurs.

#### **ENVIRONMENTAL PRECAUTIONS:**

TOXIC to aquatic organisms. Apply only to, tarped net pens or to dosing tanks in well boats.

#### **PRODUCT DECONTAMINATION AND DISPOSAL:**

1. Make the empty pouch unsuitable for further use.
2. Dispose of the pouch in accordance with the provincial requirements.
3. For information for the disposal of unused, unwanted product, and the clean-up of spills, contact the Provincial Regulatory Agency.

**TOXICOLOGICAL INFORMATION:** Azamethiphos is an organophosphate that is a cholinesterase inhibitor. Typical symptoms of overexposure to cholinesterase inhibitors include headache, nausea, dizziness, sweating, salivation, running nose and eyes. This may progress to muscle twitching, weakness, tremor, incoordination, vomiting, abdominal cramps and diarrhea in more serious poisonings. A life-threatening poisoning is signified by loss of consciousness, incontinence, convulsions and respiratory depression with a secondary cardiovascular component. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate the degree of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as pralidoxime chloride, may be therapeutic if used early; however, use only in conjunction with atropine. In cases of severe acute poisoning, use antidotes immediately after establishing an open airway and respiration. With oral exposure, the decision of whether to induce vomiting or not should be made by an attending physician.

#### **RESISTANCE MANAGEMENT RECOMMENDATIONS**

For resistance management, please note that SALMOSAN VET contains a Group 1B insecticide. Any sea lice population may contain individuals naturally resistant to SALMOSAN VET and other Group 1B insecticides. The resistant individuals may dominate the sea lice population if this group of insecticides is used repeatedly in the same site. Other resistance mechanisms that are not linked to site of action but are specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance management strategies should be followed.

To delay insecticide resistance:

- Where possible, rotate the use of SALMOSAN VET or other Group 1B insecticides with different groups that control the same pests in a site.
- Insecticide use should be based on an IPM program that includes scouting, record keeping,

and considers cultural, biological and other chemical control practices.

- Monitor treated pest populations for resistance development.
- Contact an aquaculture specialist for any additional pesticide resistance-management and/or IPM recommendations for the specific site and pest problems in your area.
- For further information or to report suspected resistance contact Benchmark Animal Health Limited through TSG Canada at 519-203-3056