

[Version 9.1,11/2024]

ANNEX I
SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

AQUI-S vet. 540 mg/mL concentrate for treatment solution for Atlantic salmon and rainbow trout

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Active substances: Isoeugenol 540 mg/ml

Excipients:

Qualitative composition of excipients and other constituents	Quantitative composition if that information is essential for proper administration of the veterinary medicinal product
Polysorbate 80	50 % by weight

Concentrate solution for the treatment of fish. Light yellowish liquid.

3. CLINICAL INFORMATION

3.1 Target species

Atlantic salmon (*Salmo salar* L.) and rainbow trout (*Oncorhynchus mykiss*).

3.2 Indications for use for each target species

For sedation and anaesthesia of Atlantic salmon and rainbow trout in relation to handling (grading, movement, transport, counting of sea lice, stripping of brood stock fish) and vaccination.

3.3 Contraindications

None.

3.4 Special warnings

Fish should not be exposed to stress just prior to use of the medicine. Level of dissolved oxygen in the bath for sedation / anaesthesia must be monitored continuously. The recommended minimum oxygen concentration during treatment is 7 mg/L.

3.5 Special precautions for use

Special precautions for safe use in the target species:

Level of sedation / anaesthesia must be monitored continuously to avoid overdosing. Safety is not documented < 4 °C and > 15 °C. General precaution should be taken for handling of fish at low temperatures as this increases risk of winter ulcers. General precaution should be taken when handling fish at high temperatures as this will increase risk of oxygen failure and disease outbreaks.

Special precautions to be taken by the person administering the veterinary medicinal product to animals:

In case of accidental ingestion, drink up to two glasses of milk or water, seek medical advice immediately and show the package leaflet or the label to the physician. In case of spill on the skin, wash with soap and rinse with water.

Isoeugenol can cause skin irritation and allergic skin reactions. Seek medical advice if allergic skin reaction persists.

People with known hypersensitivity to isoeugenol should avoid contact with the medicine. Personal protective equipment consisting of protective glasses, gloves and suitable clothing must be used when handling the veterinary medicinal product.

Spillage of the veterinary medicinal product on equipment must be rinsed off to minimise risk of accidental contact.

The work area must be well ventilated.

Special precautions for the protection of the environment:

If concentrated emissions to water occurs the water for the recipient must be sufficiently diluted. Water current must be significant to assure sufficient dilution and spread of large volumes.

3.6 Adverse events

Atlantic salmon and rainbow trout:

None known.

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or its local representative or the national competent authority via the national reporting system. See the package leaflet for respective contact details.

3.7 Use during pregnancy, lactation or lay

Fertility:

Laboratory studies in rats have shown signs of parenteral toxicity, but no observed negative effects (NOAEL) for reproductive parameters at doses < 230 mg/kg/day. NOAEL for developmental toxicity was set to 500 mg/kg/day.

3.8 Interaction with other medicinal products and other forms of interaction

None known.

3.9 Administration routes and dosage

Sedation: 2-5 mg isoeugenol/L depending on desired level of sedation. This corresponds to 3.7 – 9.3 ml Aqui-s/1000 L water. Maximum exposure time 5 hours.

Anaesthesia: 10-14 mg isoeugenol/L depending on desired level of anaesthesia. This corresponds to 18.5 – 25.9 ml Aqui-s/1000 L water. Maximum exposure time: 15 minutes.

Table: Volume of AQUI-S (mL) to be added to the tank dependent on estimated water volume and desired concentration.

Desired concentration (mg isoeugenol/L)	SEDATION		ANAESTHESIA	
	2	5	10	14
Volume in water tank				
100 liter	0.4	0.9	1.9	2.6
1000 liter (1 m³)	3.7	9.3	18.5	25.9
100 m³	370	926	-	-

Data indicates that time to desired sedation/anaesthesia is reduced with increasing water temperature.

It is recommended to prepare stock solution by dilution of the veterinary product 1:10 in water. The stock solution should be shaken to ensure a homogenous, milky-white solution. The calculated amount of stock solution is then poured into the anaesthetic bath for sedation/anaesthesia. It is recommended to add the product below water surface to reduce the creation of foam.

The stock solution must be used the same day as prepared. Mixed anaesthetic solution must be changed several times daily.

It is recommended to test the dosing on a smaller group of the representative fish.

When the desired sedation/anaesthesia is reached, the fish must be moved to fresh water for recovery. Do not use Aqui-S if you see signs of deterioration.

3.10 Symptoms of overdose (and where applicable, emergency procedures and antidotes)

Overdosing will result in depressed or ceased respiration with increased risk of cardiac arrest and death. In case of overdosing, fish must immediately be moved to fresh water assuring perfusion of the gills until normal respiration is restored.

Overdosing due to high concentration and/or prolonged exposure time may result in depressed respiration and subsequent death.

3.11 Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance

Not applicable.

3.12 Withdrawal periods

Meat and offal: 2 degree days.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code : QN01AX94

4.2 Pharmacodynamics

Similar to other anaesthetic agents, the exact mode of action is not fully elucidated. It is shown that isoeugenol has neuro-muscular blocking properties in rats. The study indicated blocking of nicotinic receptors in the nervous system. It is likely that a similar mechanism exists in fish. The rapid recovery after exposure indicates a rapid elimination of isoeugenol, and also shows that the mode of action is reversible.

4.3 Pharmacokinetics

Isoeugenol is absorbed over the gills and transported to the nervous system via the blood circulatory system.

Environmental properties

Isoeugenol can be harmful to aquatic organisms.

Isoeugenol is considered easily biodegradable in water. Relevant data indicates low or no risk of bioaccumulation in the food chain.

Polysorbate 80 has a slower degradation in water but is considered to have a low risk of bioaccumulation.

Polysorbate 80 is considered to have an acceptable environmental risk if used according to label instructions.

5. PHARMACEUTICAL PARTICULARS

5.1 Major incompatibilities

None known.

5.2 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 36 months.

Shelf life after first opening the immediate packaging: 18 months.

Shelf life after dilution according to directions: stock solution of the veterinary product must be used within the same day.

5.3 Special precautions for storage

Protect from freeze.

Store in the original container.

Keep the container tightly closed.

Store in a dry place.

Protect from direct sunlight.

5.4 Nature and composition of immediate packaging

HDPE plastic container with HDPE plastic screw cap.

100 ml, 1000 ml and 4000 ml.

100 ml container does contain a drop-dispenser for the ease of dosing small volumes.

Not all pack sizes may be marketed.

5.5 Special precautions for the disposal of unused veterinary medicinal products or waste materials derived from the use of such products

Medicines should not be disposed of via wastewater <or household waste>.

The veterinary medicinal product should not enter water courses as isoeugenol may be dangerous for fish and other aquatic organisms.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

6. NAME OF THE MARKETING AUTHORISATION HOLDER

Intervet International B.V.

7. MARKETING AUTHORISATION NUMBER(S)

{To be completed nationally}

8. DATE OF FIRST AUTHORISATION

Date of first authorisation:

{DD/MM/YYYY}

{To be completed nationally}

9. DATE OF THE LAST REVISION OF THE SUMMARY OF THE PRODUCT CHARACTERISTICS

{DD/MM/YYYY}

{To be completed nationally}

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

{To be completed nationally}

Detailed information on this veterinary medicinal product is available in the [Union Product Database \(https://medicines.health.europa.eu/veterinary\)](https://medicines.health.europa.eu/veterinary).

ANNEX III
LABELLING AND PACKAGE LEAFLET

A. LABELLING

PARTICULARS TO APPEAR ON THE OUTER PACKAGE

HDPE plastic container

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

AQUI-S vet. 540 mg/mL concentrate for treatment solution for Atlantic salmon and Rainbow trout.

2. STATEMENT OF ACTIVE SUBSTANCES

Isoeugenol 540 mg/mL

3. PACKAGE SIZE

100 mL
1000 mL
4000 mL

4. TARGET SPECIES

Atlantic salmon and Rainbow trout.

5. INDICATIONS

For products not subject to veterinary prescription:
For sedation and anaesthesia of Atlantic salmon and Rainbow trout.

6. ROUTES OF ADMINISTRATION

Dosing is identical for Atlantic salmon and Rainbow trout

Sedation: 3.7 – 9.3 mL AQUI-S/1000 litre water depending on targeted level of sedation. Maximum exposure time: 5 hours.

Anaesthesia: 18.5 – 25.9 mL AQUI-S/1000 litre water depending on targeted level of anaesthesia. Maximum exposure time: 15 minutes.

7. WITHDRAWAL PERIODS

Withdrawal periods:
2 degree days.

8. EXPIRY DATE

Exp. {mm/yyyy}

9. SPECIAL STORAGE PRECAUTIONS

Protect from frost.
Store in the original container.
Keep the container tightly closed.
Store in a dry place.
Protect from direct sunlight.

10. THE WORDS “READ THE PACKAGE LEAFLET BEFORE USE”

Read the package leaflet before use.

11. THE WORDS “FOR ANIMAL TREATMENT ONLY”

For animal treatment only.

12. THE WORDS “KEEP OUT OF THE SIGHT AND REACH OF CHILDREN”

Keep out of the sight and reach of children.

13. NAME OF THE MARKETING AUTHORISATION HOLDER

Intervet International B.V.

14. MARKETING AUTHORISATION NUMBERS

{To be completed nationally}

15. BATCH NUMBER

Lot {number}

B. PACKAGE LEAFLET

PACKAGE LEAFLET

1. Name of the veterinary medicinal product

AQUI-S vet. 540 mg/mL concentrate for treatment solution for Atlantic salmon and Rainbow trout

2. Composition

Active substances:

Isoeugenol 540 mg/mL

Excipients:

Polysorbate 80 50 % by weight

Concentrate solution for the treatment of fish. Light yellowish liquid.

3. Target species

Atlantic salmon and Rainbow trout.

4. Indications for use

For sedation and anaesthesia of Atlantic salmon and Rainbow trout in relation to handling (grading, movement, transport, counting of sea lice, stripping of brood stock fish) and vaccination.

5. Contraindications

None.

6. Special warnings

Special warnings:

Fish should not be exposed to stress just prior to use of the medicine. Level of dissolved oxygen in the bath for sedation / anaesthesia must be monitored continuously. The recommended minimum oxygen concentration during treatment is 7 mg/L.

Special precautions for safe use in the target species:

Level of sedation / anaesthesia must be monitored continuously to avoid overdosing. Safety is not documented < 4 °C and > 15 °C. General precaution should be taken for handling of fish at low temperatures as this increases risk of winter ulcers. General precaution should be taken when handling fish at high temperatures as this will increase risk of oxygen failure and disease outbreaks.

Special precautions to be taken by the person administering the veterinary medicinal product to animals:

In case of accidental ingestion, drink up to two glasses of milk or water, seek medical attention immediately and show the leaflet or the label to the doctor. In case of spill on the skin, wash with soap and rinse with water.

Isoeugenol can cause skin irritation and allergic skin reactions. Seek medical attention if allergic skin reaction persists.

People with known hypersensitivity to isoeugenol should avoid contact with the medicine. Personal protective equipment such as protective glasses, gloves and suitable clothing must be used when handling the medicine.

Spill of the medicine on equipment must be rinsed off to minimise risk of accidental contact. The work area must have good ventilation.

Special precautions for the protection of the environment:

If concentrated emissions to water occurs the water for the recipient must be sufficiently diluted. Water current must be significant to assure sufficient dilution and spread of large volumes.

Fertility:

Laboratory studies in rats have shown signs of parenteral toxicity, but no observed negative effects (NOAEL) for reproductive parameters at doses < 230 mg/kg/day. NOAEL for developmental toxicity was set to 500 mg/kg/day.

Interaction with other medicinal products and other forms of interaction:

None known.

Overdose:

Overdosing will result in depressed or ceased respiration with increased risk of cardiac arrest and death. In case of overdosing, fish must immediately be moved to fresh water assuring perfusion of the gills until normal respiration is restored.

Overdosing due to high concentration and/or prolonged exposure time may result in depressed respiration and subsequent death.

Major incompatibilities:

None known.

7. Adverse events

Atlantic salmon and rainbow trout:

None known.

Reporting adverse events is important. It allows continuous safety monitoring of a product. If you notice any side effects, even those not already listed in this package leaflet, or you think that the medicine has not worked, please contact, in the first instance, your veterinarian. You can also report any adverse events to the marketing authorisation holder or its local representative using the contact details at the end of this leaflet, or via your national reporting system: {national system details}

8. Dosage for each species, routes and method of administration

Sedation: 3.7 – 9.3 mL AQUI-S/1000 litre water depending on targeted level of sedation. This corresponds to 2-5 mg isoeugenol/litre of water. Maximum exposure time 5 hours.

Anaesthesia: 18.5 – 25.9 mL AQUI-S/1000 litre of water depending on targeted level of anaesthesia. This corresponds to 10-14 mg isoeugenol/litre of water. Maximum exposure time: 15 minutes.

Table: Volume of AQUI-S (mL) to be added to the tank dependant on estimated water volume and targeted concentration.

Targeted concentration (mg isoeugenol/L) Volume in water tank	SEDATION		ANAESTHESIA	
	2	5	10	14
100 litre	0.4	0.9	1.9	2.6
1000 litre (1 m ³)	3.7	9.3	18.5	25.9
100 m ³	370	926	-	-

Data indicates that time to targeted sedation / anaesthesia is reduced with increasing water temperature.

9. Advice on correct administration

Do not use AQUI-S if you notice visible signs of deterioration.

It is recommended to prepare a stock solution of AQUI-S prior to adding it to the anaesthetic bath. This ensures rapid and uniform mixing of AQUI-S in the treatment water. Make a 1:10 stock solution by diluting a measured amount of AQUI-S in 9 equal parts of water. The stock solution should be shaken to ensure a homogenous, milky-white solution. The calculated amount of stock solution is then poured into the anaesthetic bath and it is recommended to add the stock solution beneath the water surface to reduce foaming.

Dosing is temperature dependant. When targeted level of sedation / anaesthesia is reached, the fish must be transferred to fresh water for recovery. Level of sedation / anaesthesia must be monitored continuously to prevent overdosing. It is recommended to test dosing on a small number representative fish.

Stock solution must be used on the same day as it is prepared. The anaesthetic bath should be replaced several times during the day to maintain efficacy.

The work area must have good ventilation. Personal protective equipment as protective glasses, gloves and suitable clothing must be used when handling the medicine. Spill of medicine on equipment must be rinsed off with water to prevent accidental exposure contact.

10. Withdrawal periods

Meat and offal: 2 degree days.

11. Special storage precautions

Keep out of the sight and reach of children.

- Protect from frost.
- Store in the original container.
- Keep the container tightly closed.
- Store in a dry place.
- Protect from direct sunlight.

Do not use this veterinary medicinal product after the expiry date which is stated on the label.
Shelf life after first opening the container: 18 months.
Shelf life after dilution according to directions: use the same day.

12. Special precautions for disposal

Medicines should not be disposed of via wastewater <or household waste>.
{To be completed nationally}

This veterinary medicinal product should not enter water courses as isoeugenol may be dangerous for fish and other aquatic organisms.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any applicable national collection systems. These measures should help to protect the environment.

Ask your <veterinary surgeon> <or> <pharmacist> how to dispose of medicines no longer required.
{To be completed nationally}

13. Classification of veterinary medicinal products

{To be completed nationally}

14. Marketing authorisation numbers and pack sizes

{MA no. To be completed nationally}

Pack sizes: 100 ml, 1000 ml and 4000 ml.
Not all pack sizes may be marketed.

15. Date on which the package leaflet was last revised

{MM/YYYY}
{To be completed nationally}

Detailed information on this veterinary medicinal product is available in the [Union Product Database \(https://medicines.health.europa.eu/veterinary\)](https://medicines.health.europa.eu/veterinary).

16. Contact details

Marketing authorisation holder <,> <and> <manufacturer responsible for batch release> <and contact details to report suspected adverse events>:
{To be completed nationally}

Manufacturer responsible for batch release:
Intervet GesmbH
Siemensstrasse 107
1210 Vienna
Austria

<Local representatives <and contact details to report suspected adverse events>:>
{To be completed nationally}

<For any information about this veterinary medicinal product, please contact the local representative of the marketing authorisation holder.
{To be completed nationally}