PRODUCT BULLETIN

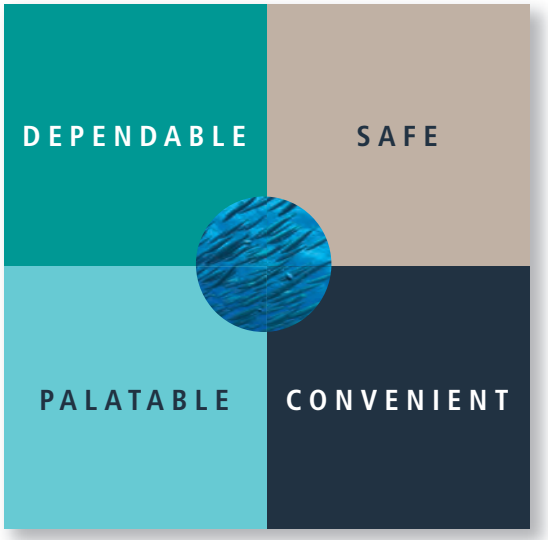
AQUAFLOR®

FLORFENICOL / TYPE A MEDICATED ARTICLE

Now approved for use in all freshwater-reared finfish with more indications

DEPENDABLE

- **Broad-spectrum antibiotic** with unique molecular structure
- Proprietary formulation **developed specifically for aquaculture**
- Keeps fish healthy, so they stay on feed for **optimum survival, growth and returns**
- Reduces mortality so you can produce **more fish**



SAFE

- **No adverse effects** on fish behavior or performance, even when tested at 5X and 10X dose rates[1]
- **Developed specifically for fish** and food-animal species — not used in human medicine
- **Friendly to environment** — no significant risk to aquatic ecosystems

PALATABLE

- Studies show that **fish readily consume feed with Aquaflor** — palatability comparable to unmedicated feed
- **Minimize wasted feed**, maximize antibiotic uptake
- Uniform granulation for optimum distribution in feed and **more accurate dosage** delivery

CONVENIENT

- Now approved for **all freshwater-reared finfish** with more indications
- Can be fed from **fingerlings to food fish**
- May be used in **sinking or floating feeds**
- Stable under high-temperature extrusion processes
- Single withdrawal time (15 days) for all species and indications at dose rates of up to 15 mg/kg

[1]See product label on next page for more details.

MERCK Animal Health

PRODUCT BULLETIN

2.0 kg (4.4 lb)

AQUAFLOR®

FLORFENICOL / TYPE A MEDICATED ARTICLE

For Use in Freshwater-reared Finfish Feeds Only

Do Not Feed Undiluted

CAUTION: Federal law limits this drug to use under the professional supervision of a licensed veterinarian. Animal feed bearing or containing this veterinary feed directive drug shall be fed to animals only by or upon a lawful veterinary feed directive (VFD) issued by a licensed veterinarian in the course of the veterinarian's professional practice.

Active Drug Ingredient: Florfenicol 500 g per kg (227.27 g per lb)
Inert ingredients: Lactose and Povidone

Description: Each kg of Aquaflor® (florfenicol) contains 500 g (1.1 lb) of florfenicol in a palatable base.

Indications:

Fish Species	Indication	Florfenicol (mg/kg body weight/day)
Freshwater-reared salmonids	For the control of mortality due to furunculosis associated with *Aeromonas salmonicida*	10
	For the control of mortality due to coldwater disease associated with *Flavobacterium psychrophilum*	
Freshwater-reared finfish	For the control of mortality due to columnaris disease associated with *Flavobacterium columnare*	Warmwater: 10 - 15 Others: 10
Catfish	For the control of mortality due to enteric septicemia associated with *Edwardsiella ictaluri*	10 - 15
Freshwater-reared warmwater finfish	For the control of mortality due to streptococcal septicemia associated with *Streptococcus iniae*	15

Caution: Not for use in recirculating aquaculture systems. The effect of florfenicol on recirculating system biofilters and water quality has not been evaluated. The effects of Aquaflor® (florfenicol) on reproductive performance have not been determined. For catfish, a dose related decrease in hematopoietic/lymphopoietic tissue may occur. The time required for the hematopoietic/lymphopoietic tissues to regenerate was not evaluated.

RESIDUE WARNING: Feeds containing Aquaflor® (florfenicol) must be withdrawn 15 days prior to slaughter.

IMPORTANT: This product has been evaluated in salmonid and catfish feeds and should be used in feeds nutritionally similar to these evaluated feeds. Refer to the Freedom of Information Summary for details. Must be thoroughly mixed in feeds or surface-coated (top-coated) onto the feeds before use.

Mixing Instructions:

For incorporation into feed pellets: For making Aquaflor® (florfenicol) Type C Medicated Feed:

a) Aquaflor® (florfenicol) is added to other feed ingredients in the mixer prior to extrusion,
b) the ingredients are mixed thoroughly to insure homogeneity,
c) the mixture is steam pelleted or extruded and pellets are dried,
d) medicated feed pellets are mixed/coated with a predetermined amount of fish or vegetable oil, and
e) at the completion of mixing, the product is transferred to a storage tank for packaging or transport.

For surface-coating (top-coating) onto feed pellets: There are two methods for making Aquaflor® (florfenicol) Type C Medicated Feed by top-coating.

Method 1:

a) add a known quantity of fish feed into a mixer,
b) weigh out Aquaflor® (florfenicol),
c) mix Aquaflor® with feed pellets,
d) medicated feed pellets are mixed/coated with a predetermined amount of fish or vegetable oil, and
e) at the completion of mixing, the product is transferred to a storage tank for packaging or transport.

Method 2:

a) weigh out fish oil or vegetable oil into a bucket,
b) weigh out Aquaflor® (florfenicol) and mix thoroughly with the oil in the bucket,
c) add a known quantity of fish feed into a mixer,
d) add the Aquaflor® (florfenicol) and oil mixture to the feed in the mixer, slowly, while the mixer is running at low speed,
e) at the completion of mixing, the product is transferred to a storage tank for packaging or transport.

Example of Aquaflor® (florfenicol) Inclusion Rates for Preparation of Type C Medicated Feed

Feeding Rate	Florfenicol Concentration in Feed		Amount of Aquaflor® (florfenicol) per Ton of Feed		Biomass of Fish Medicated per Ton of Feed per 10-day Treatment Period
% Biomass	Grams/ton		lbs		lbs
	Dose 10 mg/kg	Dose 15 mg/kg	Dose 10 mg/kg	Dose 15 mg/kg	
0.5	1,816	2,724	8.00	12.00	40,000
1.0	908	1,362	4.00	6.00	20,000
2.0	454	681	2.00	3.00	10,000
3.0	300	450	1.32	1.98	6,666
5.0	182	273	0.80	1.20	4,000

Feeding Directions: Feed as the sole ration for 10 consecutive days. Aquaflor® (florfenicol) medicated feed should only be administered once disease has been appropriately diagnosed. Feeding fish at a percent of biomass and corresponding florfenicol concentration included in the table above will deliver the appropriate florfenicol dose.

Caution: Feed containing Aquaflor® (florfenicol) shall not be fed to finfish for more than 10 days. Following administration, fish should be re-evaluated by a licensed veterinarian before initiating a further course of therapy. The expiration date for VFD for Aquaflor® (florfenicol) must not exceed 15 days from the date of issuance. VFD for Aquaflor® (florfenicol) shall not be refilled.

WARNING: Avoid inhalation, oral exposure, and direct contact with skin or eyes. Operators mixing and handling Aquaflor® (florfenicol) should use protective clothing, gloves, goggles and NIOSH-approved dust mask. Wash thoroughly with soap and water after handling. If accidental eye contact occurs, immediately rinse thoroughly with water. If irritation persists, seek medical attention. Not for human consumption. Keep out of reach of children. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information. For more information or to report adverse effects, call 1-800-224-5318. For customer service, call 1-800-521-5767. For a copy of MSDS sheet, call 1-800-770-8878.

STORAGE CONDITIONS: Store at temperatures up to 25° C with excursions permitted to 40° C.