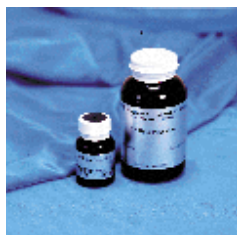


## **SYNDEL ASIA Sdn. Bhd.** (Com. Reg. No: 75135-M)

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In nature, reproductive development and spawning in finfish is controlled by environmental factors such as temperature, photoperiod, nutrition, water quality (eg. salinity, pH, oxygen level), and presence of spawning substrate. In aquaculture, it is not always possible or economically feasible to replicate natural conditions especially as many species are now grown some distance from their original geographic location. Special endocrine glands containing natural hormones, hormones extracted from endocrine glands, or hormones synthesized in the laboratory could be utilized to produce all male, all female, or sterile stocks, and accelerate growth in cultured finfish. Thus, the proper use of the hormone, 17-Beta Estradiol to control sex can significantly improve the profitability of an aquaculture operation.



**17 Beta Estradiol (2.2gm)**

**Product:** 17-beta-Estradiol  
Estrogen

**Synonyms:**  
**Product Code:** 13322

Hormones like 17 Beta Estradiol have been used to feminize populations of fish. Administered orally or in the water, use of this material produces more female fish (up to 100%) than would normally be expected. Each vial is lot numbered for efficiency. 17 Beta-estradiol (E2) is the most potent steroidal estrogen (female sex hormone) and is produced endogenously by all mammalian species. Only very low levels of the estrogen hormone, 17-beta-estradiol are needed to alter sex ratios in fish.

**Dosage:** 1mg per kg body weight of fish (or 4-6mg/kg of feed), dissolve in ethanol, add to feed and feed this to fish on alternate days for 1 month. Suitable for fishes 3 year old and above

**Safety Warning:** High concentrations of E2 can result in adverse health effects (kidney impairment, necrosis, and liver damage) on fish and low levels can even cause intersex if not used strictly according to recommended dosage and handling of the product. Even concentrations as low as 25 ng/L have been found to lead to reproductive impairment and feminization of fish resulting in skewed populations.

