



FEATURED PRODUCT

Tralopyril - a potential new antifouling biocide of concern?

Tralopyril (TP) is a biocide that has recently been introduced into marine antifouling paints, applied to boat hulls or static structures such as oil rig and drilling platform legs, which are submerged under water¹.

It is sold under the trade name 'International Copper Free' as a metal-free paint containing 4.17% w/w TP, and is typically only applied to large marine vessels over 25 m in length¹. If left untreated, fouling organisms such as microorganisms, mussels, and barnacles can cause corrosion or increase water resistance, with subsequent economic loss due to increased fuel consumption². Furthermore, there is the potential that these marine species may be transported to new locations where they can result in biological invasions².

Tralopyril

Chemical Name:

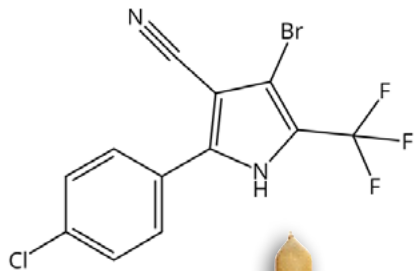
4-bromo-2-(4-chlorophenyl)-5-(trifluoromethyl)-1H-pyrrole-3-carbonitrile

CAS: 122454-29-9

Synonym: Tralopiril

Molecular Weight: 349.53

Molecular Formula: C₁₂H₅BrClF₃N₂





Biocides have the potential to be released from the paint into the surrounding environment and have adverse effects on non-target as well as target aquatic organisms. TP has been identified as toxic – as are all antifouling biocides (AFB) by nature - but is not considered to be persistent or bio accumulative (PBT) due to rapid hydrolysis in water, and thus does not fulfil the POP criteria¹. There is limited information available on the toxicity of TP to aquatic organisms, however studies have suggested high embryotoxicity and malformation potential in zebrafish, sea urchins and mussels². Additionally, it was found to cause thyroid

endocrine disruption in zebrafish². The toxicity of TP in humans has not yet been investigated, however, since it is the major activate metabolite of the pro-insecticide Chlorfenapyr it is predicted that it would exhibit similar toxicity¹. The global ban of the AFB; tributyltin (TBT) has been proclaimed as a major environmental success, however robust environmental risk assessments on substitute agents, such as TP are required to fully evaluate risk³.

Chiron offers the following Reference Materials for analytical investigation of Tralopyril:

14896.12-10MG	Tralopyril	neat	10 mg
14896.12-50MG	Tralopyril	neat	50 mg

For a quotation, please contact us today at sales@chiron.no

References

1. Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products. Evaluation of active substances. Assessment Report. Tralopyril Product-type 21 (Antifouling Products) January 2019. Accessed via: edf62568-dafb-73a2-51b7-b3118505dab3 (europa.eu)
2. Environmentally relevant concentrations of tralopyril affect carbohydrate metabolism and lipid metabolism of zebrafish (*Danio rerio*) by disrupting mitochondrial function. Xiangguang Chen et al. *Ecotoxicology and Environmental Safety* Volume 223, 15 October 2021, 112615 <https://doi.org/10.1016/j.ecoenv.2021.112615>
3. Review: ecotoxicity of organic and organo-metallic antifouling co-biocides and implications for environmental hazard and risk assessments in aquatic ecosystems. Samantha Eslava Martins et al. *Biofouling* 2018 Jan;34(1):34-52. <https://doi.org/10.1080/08927014.2017.1404036>



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