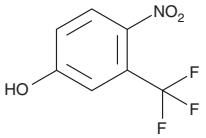
PRODUCT INFORMATION

TFM

Item No. 32870

CAS Registry No.:	88-30-2
Formal Name:	4-nitro-3-(trifluoromethyl)-phenol
Synonyms:	NSC 59758 , 3-(Trifluoromethyl)-4-Nitrophenol
MF:	$C_7H_4F_3NO_3$
FW:	207.1
Purity:	≥98%
UV/Vis.:	λ_{max}: 222, 292 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

TFM is supplied as a crystalline solid. A stock solution may be made by dissolving the TFM in the solvent of choice, which should be purged with an inert gas. TFM is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of TFM in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of TFM can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of TFM in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

TFM is a piscicide.[1] It is toxic to sea lamprey (*P. marinus*) with LC_{50} values ranging from 1.97 to 2.11 and 2.05 to 2.21 mg/L for sac and swim-up fry, respectively, 1.6 to 2.45 mg/L for juveniles, and 1.6 to 1.63 mg/L for adults. It is also toxic to juvenile lake sturgeon (*A. fulvescens*) less than 100 mm in size but not to a variety of other fish species. TFM (50 µM) uncouples oxidative phosphorylation by 22 and 28% in isolated sea lamprey and rainbow trout (*O. mykiss*) liver, respectively.[2] Formulations containing TFM have been used as lampricides in the control of larval sea lamprey populations.

References

1. Boogaard, M.A., Bills, T.D., and Johnson, D.A. Acute toxicity of TFM and a TFM/niclosamide mixture to selected species of fish, including lake sturgeon (*Acipenser fulvescens*) and mudpuppies (*Necturus maculosus*), in laboratory and field exposures. *J. Great Lakes Res.* **29(Suppl 1)**, 529-541 (2003).
2. Birceanu, O., McClelland, G.B., Wang, Y.S., *et al.* The lampricide 3-trifluoromethyl-4-nitrophenol (TFM) uncouples mitochondrial oxidative phosphorylation in both sea lamprey (*Petromyzon marinus*) and TFM-tolerant rainbow trout (*Oncorhynchus mykiss*). *Comp. Biochem. Physiol. C. Toxicol. Pharmacol.* **153(3)**, 342-349 (2011).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM