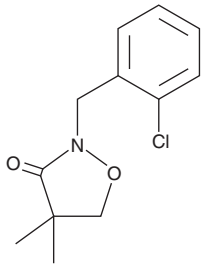
PRODUCT INFORMATION

Clomazone

Item No. 23298

CAS Registry No.:	81777-89-1
Formal Name:	2-[(2-chlorophenyl)methyl]-4,4-dimethyl-3-isoxazolidinone
MF:	$C_{12}H_{14}ClNO_2$
FW:	239.7
Purity:	≥95%
UV/Vis.:	λ_{max}: 212 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

Clomazone is supplied as a crystalline solid. A stock solution may be made by dissolving the clomazone in the solvent of choice, which should be purged with an inert gas. Clomazone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of clomazone in ethanol and DMF is approximately 33 mg/ml and approximately 16 mg/ml in DMSO.

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 clomazone can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of clomazone in PBS, pH 7.2, is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Clomazone is an herbicide that reduces chlorophyll and carotenoid levels in plants.[1] It is used to control grasses and broad-leaved weeds but is toxic to certain aquatic wildlife with an LC_{50} of 7.32 mg/L for silver catfish.[2] It decreases acetylcholinesterase (AChE) activity in brain and muscle tissue of the silver catfish (83 and 89% inhibition, respectively) when used at concentrations of 5, 10, and 20 mg/L. However, it increases AChE activity in muscle of the teleost fish.[3] Formulations containing clomazone have been used as herbicides in agriculture.

References

1. Kaňa, R., Špundová, M., Ilík, P., *et al.* Effect of herbicide clomazone on photosynthetic processes in primary barley (*Hordeum vulgare* L.) leaves. *Pestic. Biochem. Physiol.* **78(3)**, 161-170 (2004).
2. dos Santos Miron, D., Crestani, M., Rosa Shettinger, M., *et al.* Effects of the herbicides clomazone, quinclorac, and metsulfuron methyl on acetylcholinesterase activity in the silver catfish (*Rhamdia quelen*) (Heptapteridae). *Ecotoxicol. Environ. Saf.* **61(3)**, 398-403 (2005).
3. Moraes, B.S., Loro, V.L., Glusczak, L., *et al.* Effects of four rice herbicides on some metabolic and toxicology parameters of teleost fish (*Leporinus obtusidens*). *Chemosphere* **68(8)**, 1597-1601 (2007).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

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