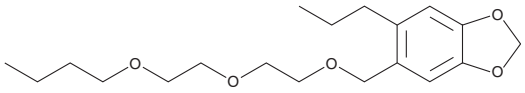
PRODUCT INFORMATION

Piperonyl Butoxide

Item No. 25820

CAS Registry No.:	51-03-6
Formal Name:	5-[[2-(2-butoxyethoxy)ethoxy] methyl]-6-propyl-1,3-benzodioxole
Synonyms:	NSC 8401, PBO
MF:	$C_{19}H_{30}O_5$
FW:	338.4
Purity:	≥95%
Supplied as:	A liquid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

Piperonyl butoxide is supplied as a liquid. A stock solution may be made by dissolving the piperonyl butoxide in the solvent of choice, which should be purged with an inert gas. Piperonyl butoxide is slightly soluble in chloroform and methanol.

Description

Piperonyl butoxide is an insecticide synergist.[1,2] It inhibits cytochrome P450 (CYP) activity in western corn rootworm (*D. virgifera*) abdominal microsomes in a concentration-dependent manner.[3] Piperonyl butoxide increases the toxicity of the pyrethroid insecticide deltamethrin (Item No. 24172) to field-collected, deltamethrin-resistant strains of the bed bug *C. lectularius* by 5.6- to 176-fold when used at a concentration of 50 µg/µl.[2] Piperonyl butoxide also increases the toxicity of the organotin insecticide cyhexatin to fourth instar larvae of susceptible strains of the cotton leafworm *S. littoralis*.[4] It is not toxic to the freshwater invertebrates *H. azteca*, *C. tentans*, and *L. variegatus* (LC_{50}s = 530, 2,740, and 3,540 µg/L, respectively) and reduces the toxicity of the organophosphate pesticides diazinon (Item No. 23769), chlorpyrifos (Item No. 21412), and azinphos-methyl.[1] Formulations containing piperonyl butoxide have been used in the control of agricultural, household, and veterinary pests.

References

1. Ankley, G.T. and Collyard, S.A. Influence of piperonyl butoxide on the toxicity of organophosphate insecticides to three species of freshwater benthic invertebrates. *Comp. Biochem. Physiol.* **110(2)**, 149-155 (1995).
2. Romero, A., Potter, M.F., and Haynes, K.F. Evaluation of piperonyl butoxide as a deltamethrin synergist for pyrethroid-resistant bed bugs. *J. Econ. Entomol.* **102(6)**, 2310-2315 (2009).
3. Scharf, M.E., Siegfried, B.D., Meinke, L.J., *et al.* Cytochrome P450-mediated N-demethylation activity and induction in insecticide-resistant and susceptible western corn rootworm populations (Coleoptera: Chrysomelidae). *Pesicide Biochem. Physiol.* **67(2)**, 137-143 (2000).
4. Radwan, H.S.A., Riskallah, M.R., and El-Keie, I.A. Synergistic effects on the toxicity of organotins on cotton leafworms. *Toxicology* **14(3)**, 193-198 (1979).

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