# PRODUCT INFORMATION

## Pyridaben-$d_{13}$

*Item No. 39259*

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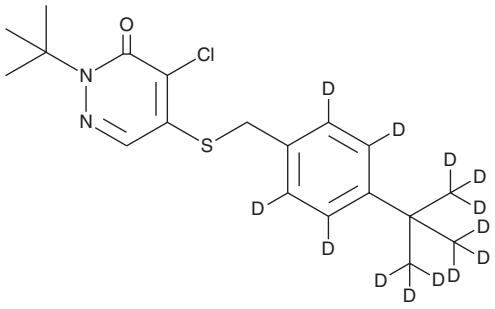
| **CAS Registry No.:** | 2468638-05-1 |
| **Formal Name:** | 4-chloro-2-(1,1-dimethylethyl)-5-[[[4-(1,1-dimethylethyl-$d_9$)phenyl-2,3,5,6-$d_4$]methyl]thio]-3(2H)-pyridazinone |
| **Synonym:** | Damanlin-$d_{13}$ |
| **MF:** | $C_{19}H_{12}ClD_{13}N_2OS$ |
| **FW:** | 378.0 |
| **Chemical Purity:** | ≥98% (Pyridaben) |
| **Deuterium Incorporation:** | ≥99% deuterated forms ($d_1$-$d_{13}$); ≤1% $d_0$ |
| **Supplied as:** | A 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

Pyridaben-$d_{13}$ is intended for use as an internal standard for the quantification of pyridaben (Item No. 25821) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Pyridaben-$d_{13}$ is supplied as a solid. A stock solution may be made by dissolving the pyridaben-$d_{13}$ in the solvent of choice, which should be purged with an inert gas. Pyridaben-$d_{13}$ is slightly soluble in chloroform.

### Description

Pyridaben is a METI acaricide that inhibits mitochondrial electron transport at complex I (METI; $K_i$ = 0.36 nmol/mg protein in rat brain mitochondria).[1] It is active against a variety of mites, inducing 100% mortality of *C. malaccensis*, *D. farina*, and *T. putrescentia* when administered *via* filter paper contact at doses of 25, 100, and 200 mg/m$^3$, respectively.[2] Pyridaben is toxic to rats when administered orally ($LD_{50}$s = 570 and 1,100 for female and male rats, respectively) and *via* inhalation ($LD_{50}$s = 0.62 and 0.66 mg/L for female and male rats, respectively).[3] Formulations containing pyridaben have been used in the control of mites in agriculture.

### References


1. Navarro, A., Bández, M.J., Gómez, C., *et al.* Effects of rotenone and pyridaben on complex I electron transfer and on mitochondrial nitric oxide synthase functional activity. *J. Bioenerg. Biomembr.* **42(5),** 405-412 (2010).
2. Takahashi, M., Shono, T., and Umehara, T. Efficacy of pyridaben against three kinds of mites, *Cheyletus malaccensis*, *Dermatophagoides farinae* and *Tyrophagus putrescentiae*. *Jpn. J. Sanit. Zool.* **41(3),** 257-260 (1990).
3. Igarashi, H. and Sakamoto, S. Summary of toxicity studies with pyridaben. *J. Pest. Scien.* **19(4),** S243-S251 (1994).





**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