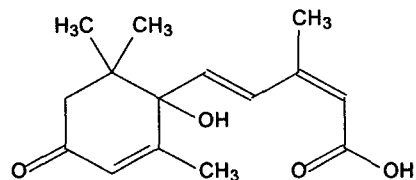


INFORMATION SHEET

9/10/03

Abscisic Acid

(±)-Abscisic acid [14375-45-2]
(+)-Abscisic acid [21293-29-8]
(-)-Abscisic acid [14398-53-9]



NOMINATION DATA:

Identified from a search of the chemical industry literature

CHEMICAL NAME:

2,4-Pentadienoic acid, 5-(1-hydroxy-2,6,6-trimethyl-4-oxo-2-cyclohexen-1-yl)-3-methyl-, (S-(Z,E))- (9CI)

SYNONYMS:

ABA, ABK, 2-cis-4-trans-Abscisic acid, Abscisin II, Dormin (ChemID; ChemFinder)

P/C PROPERTIES:

(±)-Abscisic acid: crystals; mol. wt. 264.32; mp 188-190°C (Merck Index)

(+)-Abscisic acid: colorless crystals; mol. wt. 264.32; sublimes at 120 °C; sol. in acetone, chloroform, ether, ethyl acetate, NaHCO₃; slightly sol. in benzene, water; sparingly sol. in petroleum ether (Hawley's CCD, Merck Index)

(-)-Abscisic acid: mol. wt. 264.32; mp 162-163 °C (Merck Index)

STRUCTURAL CLASS:

Sesquiterpenoid

AVAILABILITY:

(+/-)-Abscisic acid:

Sigma-Aldrich: [862169]; 98%; \$53.70/250 g

A.G. Scientific: [A1094]; >99%; \$175/g; Bulk quantity available

(+)-Abscisic acid:

Sigma-Aldrich: [00012]; 99%; \$928.20/5 mg

A.G. Scientific: [A1103]; >98%; \$160/mg

PRODUCTION/EXPOSURE/ENVIRONMENTAL FATE:

- (±)-Abscisic acid: 9 suppliers, (+)-abscisic acid: 8 suppliers, (-)-abscisic acid: 1 suppliers (ChemSources); 4 producers/distributors (OPDCBD; CWBG; Chemcyclopedia)
- (-)-Abscisic acid does not occur in nature; is not inert and is degraded by a different route and a slower rate than (+)-abscisic acid (Internet)
- Listed in the TSCA Inventory
- Cited in 591 patents from 1976 to present (USPTO)

USE:

- Natural plant growth-inhibiting hormone (Hawley's CCD; K-O Encyc.)
- Used in orchard sprays to facilitate fruit harvesting, defoliant (Hawley's CCD)
- Key factor regulating transpiration, stress responses, germination of seeds and embryogenesis (Internet)

TOXICITY:

Acute Toxicity:

- (+)-Abscisic acid: LD₅₀: mammal, ip; >1500 mg/kg (Sigma-Aldrich MSDS)

Chronic Toxicity:

- No information found in the available literature

Genotoxicity:

- Has been tested in *Salmonella typhimurium* TA98 and TA100; results (in Japanese) not available for review (EMICBACK/50918)

REFERENCES:

| | | | | | | | | | | | |
|------------------|---|---------------|---|----------|---|-----------|---|----------------|---|-----------|---|
| CRC Hnbk/POC | √ | DWCP | | NCI TF | x | HSDB | √ | TSCA Inventory | x | TOXLINE | √ |
| Merck Index | √ | OPDCBD | √ | NTP TF | x | RTECS | √ | NOES data | | INTERNET | √ |
| Sigma-Aldrich | √ | CWBG | √ | NCI STTP | x | CCRIS | x | ACGIH TLV | x | MEDLINE | √ |
| Ullmann's Encyc. | √ | Chemyclopedia | √ | PHS-149 | x | GENETOX | x | K-O Encyc. | √ | CANCERLIT | √ |
| Hawley's CCD | √ | Verschueren | x | IARC | x | EMIC/BACK | √ | ChemID | √ | USITC | x |
| CEH Handbook | x | ChemSources | √ | USPTO | √ | EPA | √ | ChemFinder | √ | CA EPA | √ |

√ = source checked, data found; x = source checked, but no data found