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bromobutide

Herbicide ^Top

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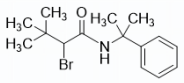

Nomenclature ^Top

bromobutide

Common name bromobutide (BSI, E-ISO, (*m*) F-ISO)

IUPAC name 2-bromo-3,3-dimethyl-*N*-(1-methyl-1-phenylethyl)butyramide

CAS RN *[74712-19-9]*

Chemical Abstracts name 2-bromo-3,3-dimethyl-*N*-(1-methyl-1-phenylethyl)butanamide

Development codes S-4347 (Sumitomo)

SMILES code CC(C)(C)C(Br)C(NC(C)(C)C1=CC=CC=C1)=O

InChI key WZDDLAZXUYIVMU-UHFFFAOYSA-N

InChI InChI=1S/C15H22BrNO/c1-14(2,3)12(16)13(18)17-15(4,5)11-9-7-6-8-10-11/h6-10,12H,1-5H3,(H,17,18)

Physical chemistry ^Top

bromobutide

Mol. wt. 312.2

M.f. $C_{15}H_{22}BrNO$

Physical form Tech. forms colourless to yellow crystals.

M.p. (°C) 179.5

V.p. (mPa) 0.0592 (25 °C)

log K_{ow} 3.46

Henry (Pa m^3 mol^{-1}, calc.) 6.53

Water solubility (mg/l, 20-25 °C) 3.54

Organic solubility (g/l, 20-25 °C) Soluble in hexane (0.5), methanol (35), xylene (4.7)

Stability Aqueous photolysis DT_{50} 13 w. Storage stable.

Commercialisation ^Top

bromobutide

History Reported by O. Kirino *et al.* (*Agric. Biol. Chem.*, 1981, **45**, 2669). Introduced by Sumitomo Chemical Co. Ltd and first registered in Japan in 1986.

Manufacturers Sumitomo Chemical

Patents US 4288244; GB 2031420.

Applications ^Top

bromobutide

Spectrum and route of action Selective herbicide.

Uses Control of grass and sedge weeds, especially *Echinochloa* spp., *Eleocharis acicularis* and *Scirpus juncoides*, and some broad-leaved weeds in paddy and upland rice, at 600-900 g/ha.

Phytotoxicity Rice injury may occur on sandy fields, or on rice which has been shallowly transplanted.

Formulation types GR

Selected products Sumiherb (Sumitomo Chemical)

Selected mixtures Kumistar (+ bensulfuron-methyl+ fenoxasulfone) (Kumiai), Revolver Ace (+ mefenacet + pyrazosulfuron-ethyl+ cyhalofop-butyl) (Nissan), Shokinie (+ pentoxazone) (Kumiai), Topgun (+ bensulfuron-methyl+ pyriminobac-methyl + pentoxazone) (Kumiai)

Other mixtures Alphapro (+ bensulfuron-methyl+ fenoxasulfone) (Mitsui Chemicals Agro), Gohwan (+ bensulfuron-methyl+ oxaziclomefone+ clomeprop) (Hokko), Hachiku (+ butachlor+ benzofenap) (Hokko), Homerunking (+ bensulfuron-methyl+ oxaziclomefone+ clomeprop) (Hokko), Innova DX (+ bensulfuron-methyl+ fentrazamide) (Bayer CropScience), Ippon D (+ bensulfuron-methyl+ pyraclonil+ daimuron) (Nihon Nohyaku), Kuroobi (+ oxaziclomefone+ clomeprop) (Nihon Nohyaku), Onebest (+ thenylchlor+ pyrazoxyfen) (Ishihara Sangyo), Samourai (+ oxaziclomefone+ benzofenap) (Nihon Nohyaku)

Discontinued mixtures Kusatori DX ((+ bensulfuron-methyl+ fentrazamide)) , Niceshot-Jumbo ((+ pyrazolynate+ cafenstrole)) , See-Z ((+ pyributicarb+ benzofenap)) , Slasher ((+ pretilachlor+ dimethametryn+ pyrazolynate)) , Topgan A ((+ bensulfuron-methyl+ pyriminobac-methyl + pentoxazone+ azimsulfuron)) (Kumiai)

Analysis ^Top

bromobutide

Product GLC-FID. **Residues** GLC.

Regulatory ^Top

bromobutide

Toxicological & environmental reviews

Toxicity class: WHO (a.i.) U

Mammalian toxicology ^Top

bromobutide

Acute oral (LD_{50}, mg/kg) rats >5000

Acute percutaneous (LD_{50}, mg/kg) rats >5000

Ecotoxicology ^Top

bromobutide

Fish LC_{50} (48 h) for carp >5.0 mg/l.

Daphnia EC_{50} (48 h) >5.0 mg/l.

Algae E_rC_{50} (72 h) >5.0 mg/l.