dicamba-sodium
Mol. wt. 243.0 **Mol. formula** $C_8H_5Cl_2NaO_3$
Solubility In water 360 g acid equivalent/l.

dicamba-trolamine
Mol. wt. 346.2 **Mol. formula** $C_{12}H_{21}Cl_2NO_6$

COMMERCIALISATION

History Herbicide reported by R. A. Darrow & R. H. Haas (*Proc. South. Weed Conf., 14th,* 1961, p. 202). Introduced by Velsicol Chemical Corp. and now manufactured and marketed by Sandoz AG. **Patents** US 3013054 **Manufacturer** Sandoz.

APPLICATIONS

Mode of action Selective systemic herbicide, absorbed by the leaves and roots, with ready translocation throughout the plant via both the symplastic and apoplastic systems. Acts as an auxin-like growth regulator. **Uses** Control of annual and perennial broad-leaved weeds and brush species in cereals, maize, sorghum, sugar cane, asparagus, perennial seed grasses, turf, pastures, rangeland, and non-crop land. Used in combinations with many other herbicides. **Phytotoxicity** Most legumes are sensitive. **Formulation type** GR; SL. **Compatibility** Compatible with most other pesticides. Precipitation of the free acid from water may occur if the dimethylammonium salt is combined with lime sulfur, heavy-metal salts, or strongly acidic materials. **Principal tradename** 'Banvel' (dimethylammonium salt) (Sandoz), 'Banvel SGF' (sodium salt) (Sandoz), 'Marksman' (potassium salt, mixture) (Sandoz), 'Sivel' (dimethylammonium salt) (Siapa).
Mixtures [*dicamba* +] MCPA; mecoprop; atrazine; 2,4-D; dichlorprop; bromoxynil + mecoprop; 2,4-D + ioxynil; dichlorprop + MCPA; MCPA + mecoprop; mecoprop + triclopyr; and many more.

ANALYSIS

Product analysis by i.r. spectrometry (*AOAC Methods,* 1990, 969.07, 971.07; *CIPAC Handbook,* 1980, **1A,** 1204; M. A. Malina, *Anal. Methods Pestic. Plant Growth Regul.,* 1973, **7,** 545) or by hplc (*AOAC Methods,* 1990, 984.07; *CIPAC Handbook,* 1988, **D,** 51).
Residues in plants and soil determined by glc of a suitable ester (*idem, ibid.*; H. K. Suzuki *et al., ibid.,* 1978, **10,** 305).

MAMMALIAN TOXICOLOGY

dicamba
Acute oral LD_{50} for rats 1707 mg/kg. **Skin and eye** Acute percutaneous LD_{50} for rabbits > 2000 mg/kg. Extremely irritating and corrosive to eyes; moderately irritating to skin (rabbits). Moderate skin sensitiser (guinea pigs). **Inhalation** LC_{50} (4 h) for rats > 9.6 mg/l. **NOEL** In 2 y feeding trials, rats receiving 500 mg/kg diet and dogs receiving 50 mg/kg diet showed no ill-effects. Non-teratogenic in rabbits at 10 mg/kg daily and in rats at 400 mg/kg daily. In 3-generation reproduction study in rats, no adverse effects observed at the highest dose of 500 mg/kg diet. Non-mutagenic in *in vivo* and *in vitro* studies. **Toxicity class** WHO Table 5; EPA III.