

for rats 20 mg/kg diet (1.5 mg/kg daily); for dogs 200 mg/kg (6.6 mg/kg daily).

Toxicity class WHO III; EPA III.

ECOTOXICOLOGY

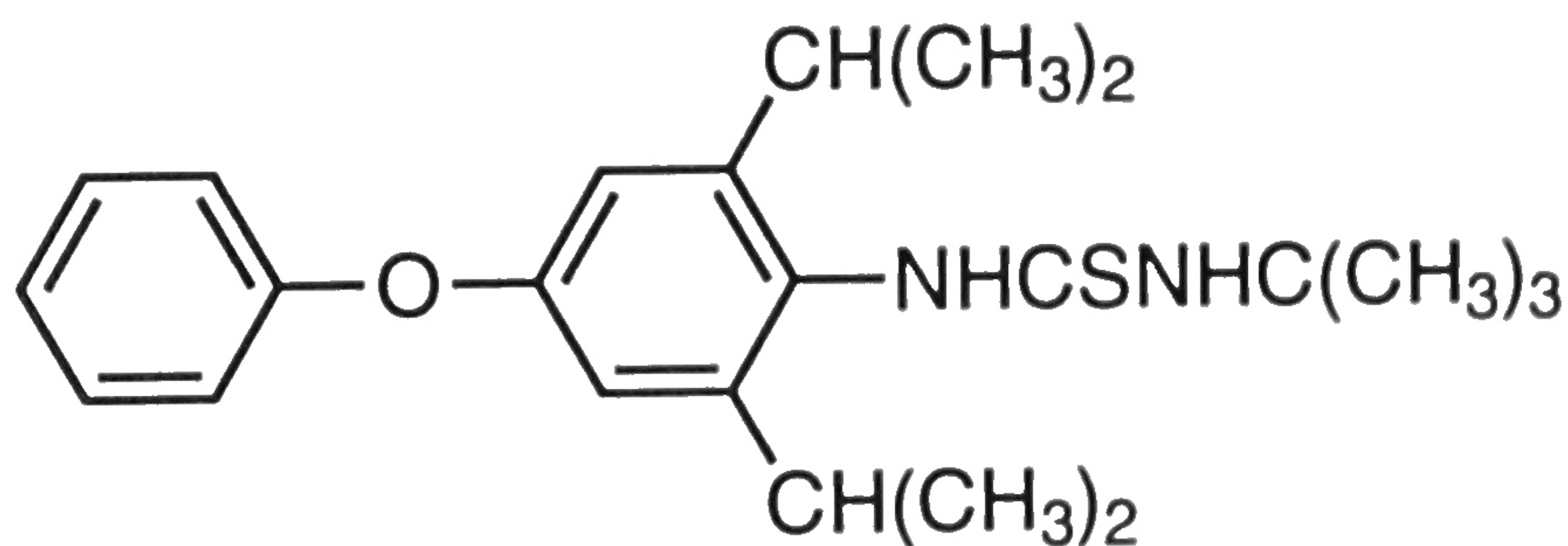
Birds LC₅₀ (8 d) for Japanese quail > 10 000 mg/kg. **Fish** LC₅₀ (96 h) for rainbow trout 2.2, common carp 37 mg/l. **Bees** Not toxic to bees; LD₅₀ (oral) > 197 µg/bee, (topical) > 101 µg/bee. **Daphnia** EC₅₀ (48 h) 45 mg/l. **Other beneficial spp.** LC₅₀ (14 d) for earthworms 160 mg/kg soil.

ENVIRONMENTAL FATE

Animals Major pathways in animal metabolism are hydrolysis of the methylthio group to form the hydroxy derivative, sulfoxidation of the methylthio group, and side-chain dealkylation. **Plants** Major pathways in plant metabolism are the hydrolysis of the methylthio group to form the hydroxy derivative, conjugation with glutathione and side-chain dealkylation. **Soil and water** Degradation involves oxidation of the methylthio group to sulfoxide and sulfone, hydrolysis with the introduction of a 2-hydroxy group, dealkylation at the substituted amino groups, cleavage of the amine moiety, and ring opening. Duration of residual activity in soil is c. 3 months. K_{oc} 150.

200 diafenthion

Insecticide Acaricide



NOMENCLATURE

Common name diafenthion (BSI, draft E-ISO).

IUPAC name 1-*tert*-butyl-3-(2,6-di-isopropyl-4-phenoxyphenyl)thiourea.

C.A. name *N*-[2,6-bis(1-methylethyl)-4-phenoxyphenyl]-*N'*-(1,1-dimethylethyl)thiourea.

CAS RN [80060-09-9] **Development code** CGA 106 630.

PHYSICO-CHEMICAL PROPERTIES

Mol. wt. 384.6 **Mol. formula** C₂₃H₃₂N₂OS

Form White powder. **M.p.** 144.6-147.7 °C (OECD 102) **V.p.** < 2 × 10⁻⁶ Pa (25 °C)

(OECD 104) **SG/density** 1.09 (20 °C) (OECD 109) **K_{ow}** logP = 5.76 (OECD 107)

Solubility In water 0.06 mg/l (25 °C). In ethanol 43, acetone 320, toluene 330, *n*-hexane 9.6, *n*-octanol 26 (all in g/l, 25 °C). **Stability** Stable in air and water and to light.

COMMERCIALISATION

History Insecticide and acaricide reported by H. P. Streibert *et al.* (Proc. 1988 Br. Crop Prot. Conf., 1, 25). Introduced by Ciba-Geigy AG. **Patents** GB 2060626; DE 3034905

Manufacturer Ciba-Geigy.