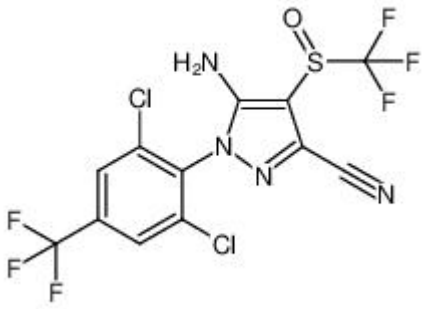
FC-080 (CAS 120068-37-3) Fipronil



BASIC INFORMATION	cas: 120068-37-3 Name: Fipronil; 5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-(trifluoromethylsulfinyl)pyrazole-3-carbonitrile;5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl)-4-(trifluoromethanesulfinyl)-1H-pyrazole-3-carbonitrile;RM 1601;5-amino-1-(2,6-dichloro-α,α,α-trifluoro-p-tolyl)-4-[(trifluoromethyl)sulfinyl]pyrazole-3-carbonitrile;5-amino-1-[2,6-dichloro-4-(trifluoromethyl)phenyl]-4-[(trifluoromethyl)sulfinyl]-1H-pyrazole-3-carbonitrile ; Molecular formula: C12H4Cl2F6N4OS Molecular weight: 437.14800 PSA: 103.91000 LOGP: 5.72608
PHYSICAL INDEX	Appearance and properties: yellow powder Density: 1.477-1.626 Boiling point: 510.1° C at 760 mmHg Melting point: 200-201° C Flash point: 262.3° C Refractive index: 1.617 Stability: Stable at normal temperatures and pressures. Storage conditions: 0-6° C Vapor pressure: 1.61E-10mmHg at 25° C

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SECURITY INFORMATION	RTECS number: UQ4430250 Safety instructions: S26-S36/37/39-S45-S60-S61 Hazard category code: R23/24/25 Dangerous goods transport code: 2588 Hazard category: 6.1(b) Packing level: III Dangerous goods mark: N; T
PRODUCTION METHODS AND APPLICATION	production method 1. Preparation of 5-amino-3-cyano-1-(2,6-dichloro-4-trifluoromethylphenyl)pyrazole. Nitrosyl sulfide prepared from 7g sodium nitrite and 27.5mL concentrated sulfuric acid The acyl suspension was diluted with acetic acid, and 21.2g of 2,6-dichloro-4-trifluoromethylaniline 50 mL of acetic acid solution was added dropwise at 25～32℃. The temperature was raised to 55℃, heated for 20min, and poured into 2,3-bis In a solution of ethyl cyanopropionate in acetic acid (60 mL) and water (125 mL), stir for 15 min, add water, separate the oil layer, extract with dichloroethane, combine the oil layers, wash with ammonia to pH 9, separate the layers, use water, Wash with dilute hydrochloric acid, dry, filter, and evaporate in vacuum. The oily substance is recrystallized from toluene and hexane. The yield is 70.9%. Preparation of 5-amino-3-cyano-1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfanylpyrazole (10.8g) of dichloromethane solution was added dropwise to the dichloromethane solution containing 20g of the product of the previous step. Stir overnight at room temperature. After washing with water, drying, filtering and desolventizing, 26.3 g of solid matter was obtained. After recrystallization, the product was obtained with a yield of 92%. Synthesis of Fipronil Under stirring, the methylene chloride solution of 10 g of the product of the previous step was treated with 4.5 g of m-chloroperoxybenzoic acid. After stirring overnight, another 2 parts of 1.6 g of m-chloroperoxybenzoic acid were added and left for 2 days. Diluted with ethyl acetate, washed with sodium sulfite solution, sodium carbonate solution and water in turn, dried, filtered, desolventized, and eluted and purified with dichloromethane on a SiO2 chromatographic column to obtain 6.0 g of fipronil with a yield of 57.8 %. Please refer to "Pesticide" magazine No. 3, 2002, the synthesis of a new insecticidal type-fipronil. use

	Fipronil is a broad-spectrum insecticide with outstanding control effect on many kinds of pests. It is against Hemiptera, Lepidoptera, Thysanoptera, Coleoptera and other pests, as well as against cyclopentadienes and chrysanthemums. Pests that have developed resistance to esters and carbamate insecticides all have extremely high susceptibility. It can be used in rice, vegetables, cotton, tobacco, potatoes, sugar beets, soybeans, rapeseed, tea, alfalfa, sugar cane, sorghum, corn, fruit trees, forests, ornamental plants, public health, animal husbandry, storage products and ground construction, etc. Crop pests and sanitary pests and locusts.