

GHS Classification

ID184

CAS 69327-76-0

Physical Hazards

2-tert-Butylimino-3-isopropyl-5-phenyltetrahydro-4H-1,3,5-thiadiazin-4-one; buprofezin

Date Classified: Mar. 15, 2007 (Environmental Hazards: Mar. 31, 2006)

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Classification not possible	-	-	-	No data available
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	Non-pyrophoric when in contact with air at a room temperature and used as agricultural chemicals.
11 Self-heating substances and mixtures	Classification not possible	-	-	-	Test methods applicable to solid (melting point <= 140degC) substances are not available.
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	The chemical structure of the substance does not contain metals or metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Organic compounds containing oxygen and the oxygen is chemically bonded only to carbon (but not to other elements).
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid substances are not available.

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 4	Exclamation mark	Warning	Harmful if swallowed	From LD50 value (male/female: 1635/2015 mg/kg; male/female: 2198/2355 mg/kg) of two oral administration examinations using rat (Agricultural Chemical Registration Data (2001)), the lowest value was adopted (1635mg/kg), and it was set as Category 4.
1 Acute toxicity (dermal)	Not classified	-	-	-	From the rat LD50 value >5000mg/kg of the dermal administration test (Agricultural Chemical Registration Data (2001)), it was set as the outside of Category.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Category 4	Exclamation mark	Warning	Harmful if inhaled	It was set as Category 4 based on LC50 value >4.57mg/L/4H using a rat of the inhalation exposure test (dust mists) (Agricultural Chemical Registration Data (2001)).
2 Skin corrosion / irritation	Not classified	-	-	-	Since only very slight erythema was found on one out of six rabbits in the skin irritation test (Agricultural Chemical Registration Data), it was classified as out of Category. (in addition, only a guinea pig skin irritation study is indicated in the Agricultural-Chemicals abstracts, and according to this finding, most skin irritation shall be disregarded).
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Since reversible stimulativeness (redness, dropsy, iris change) was accepted as a result of the eye stimulativeness examination using a rabbit (Agricultural Chemical Registration Data(2001)), it was thought that there were mild eye irritancies, and was set as Category 2B.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Not classified	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	(Respiratory sensitization)-; (Skin sensitization)-	Respiratory sensitization: No data. Skin sensitization: Classified as out of category because the result of a sensitization test using guinea pigs found no sensitization (Agricultural Chemical Registration Data (2005)).
5 Germ cell mutagenicity	Not classified	-	-	-	The substance was regarded as outside the categories based on the negative results in the in vivo micronucleus test (Agricultural Chemical Registration Data, 2005) and in the in vitro reverse mutation test and the chromosome aberration test (Agricultural Chemical Registration Data, 2001).
6 Carcinogenicity	Not classified	-	-	-	Considering that carcinogenicity is not observed as a result of the carcinogenicity tests using rats and the mice for two years (Agricultural Chemical Registration Data (2001)), it was set as the outside of and Category.

7	Toxic to reproduction	Not classified	-	-	-	As a result of two generation reproduction study using rat, and of the teratogenicity test using rat and rabbit, there were not reproductive toxicity/teratogenicity (Agricultural Chemical Registration Data (2001)). So it was considered as on the outside of Category.
8	Specific target organs/systemic toxicity following single exposure	Classification not possible	-	-	-	In two oral acute toxicity tests in rat (lowest dosage : 1021mg/kg or 1412mg/kg), although "reduced spontaneous locomotor activity, dacryorrhea, salivation, urinary incontinence, diarrhea, and no special mention at autopsy of the survival examples", or "reduced spontaneous locomotor activity at all dosage groups, dacryorrhea, and adhesions of the duodenal (site of perforation) and liver at autopsy of the survival examples" of were observed (Agricultural Chemical Registration Data (2001)), it is difficult to identify the specific target organs from these results presupposed. Therefore, it cannot be classified since data is insufficient.
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (blood system, liver, kidneys, thyroid gland, brain)	Health hazard	Warning	May cause damage to organs (blood system, liver, kidneys, thyroid gland, brain) through prolonged or repeated exposure	Since in the subacute toxicity study for 13 weeks using rats and dogs (Agricultural Chemical Registration Data (2005)), the decrease effect was observed in hemoglobin, hematocrit value and the number of the erythrocyte (in rat), and the increase effects was observed in organs weight (liver, kidney, thyroid gland) (in rat and dog), the abnormalities were observed histopathologically in these organs in rats. Moreover, histopathological abnormalities were observed in rat brain (anterior pituitary). Since above observations were mainly observed at 1000 ppm or more (male: 85mg/kg/day, female:103mg/kg/day), they were classified into Category 2 (blood systems, liver, kidney, thyroid gland, brain).
10	Aspiration hazard	Classification not possible	-	-	-	No data available

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96-hour LC50=0.527mg/L of fishes (Carp) (Agricultural Chemical Registration Data, 2004).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity is Category 1, supposed not rapidly degrading (BIOWIN), and bioaccumulative (log Kow=4.3(PHYSROP Database, 2005)).