

GHS Classification

ID274

CAS 106917-52-6

Physical Hazards

2',4-Dichloro-alpha,alpha,alpha-trifluoro-4'-nitro-m-toluenesulfonamide; Flusulfamide

Date Classified: Nov. 20, 2006 (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	Classification not possible	—	—	—	Classification not possible due to lack of data on the decomposition energy, though the substance contains nitro groups with its oxygen budget calculated at -98, and decomposes at 250degC (Agricultural Chemical Registration Data).
2 Flammable gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "solid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "solid" according to GHS definition
6 Flammable liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
7 Flammable solids	Classification not possible	—	—	—	No data available
8 Self-reactive substances and mixtures	Classification not possible	—	—	—	Classification not possible due to lack of data, though containing nitro groups, and being sulfonyls containing chemical groups with self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	—	—	—	Considered non-pyrophoric when in contact with air at ordinary temperatures since the substance is stable to heat (up to 150degC) (Agricultural Chemical Registration Data)
11 Self-heating substances and mixtures	Not classified	—	—	—	Stable to heat (up to 150degC) (Agricultural Chemical Registration Data)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	—	—	—	Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At)
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
14 Oxidizing solids	Classification not possible	—	—	—	Classification not possible due to lack of data, though being organic compounds containing oxygen (but not chlorine and fluorine) bound to the elements other than carbon and hydrogen
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 with melting point of >55degC are not available (melting point: 169.7-171.0degC (Agricultural Chemical Registration Data)).

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the LD50 (oral route) value of 132mg/kg in rat acute toxicity studies (Agricultural Chemical Registration Data (1990)).
1 Acute toxicity (dermal)	Not classified	—	—	—	Based on the absence of mortality at the highest dose of 2,000mg/kg in rat acute toxicity studies using the dermal route of exposure (Agricultural Chemical Registration Data (1990)).
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is a solid according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: dust, mist)	Category 2	Skull and crossbones	Danger	Fatal if inhaled	Based on the dog LC50 (4 hour inhalation) value of 0.079mg/L (Agricultural Chemical Registration Data (1990)).
2 Skin corrosion / irritation	Not classified	—	—	—	Rabbit skin irritation tests yielded a mean Draize score of 0.09, suggesting little potential for irritation (Agricultural Chemical Registration Data (1990)).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye damage	Based on the evidence of severe irritation with effects persisting in one of six test animals after day 7, observed in rabbit eye irritation tests (Agricultural Chemical Registration Data (1990)).
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 available Skin sensitization: Based on negative results obtained in guinea pig skin sensitization tests using the Buehler method (Agricultural Chemical Registration Data (1990)).
5 Germ cell mutagenicity	Classification not possible	—	—	—	Classification is not possible due to lack of data on in vivo studies, though negative results were reported in several in vitro studies (reverse mutagenicity tests, DNA repair tests and chromosome aberration tests) (Agricultural Chemical Registration Data (1990)).
6 Carcinogenicity	Not classified	—	—	—	There was no treatment-related evidence of tumor incidence observed in 2-year (rats) and 18-month (mice) carcinogenicity studies (Agricultural Chemical Registration Data (1990)).
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	The available rat reproductive toxicity studies and rat/rabbit teratogenicity studies provide slight evidence of reduced pup viability and visceral/skeletal anomalies at doses inducing reduced body weight gains in parental animals (Agricultural Chemical Registration Data (1990)). Since it cannot be clearly demonstrated that the findings of pup effects are secondary to parental toxicity, the substance is classified into Category 2.
8 Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system)	Health hazard	Danger	Causes damage to organs (nervous system)	In the available rat oral studies, clinical signs and symptoms including mydriasis, abnormal gait, sedation, lacrimation, tremors and emaciation were found (Agricultural Chemical Registration Data (1990)). These effects were observed at dosing levels within the guidance value ranges for Category 1.
9 Specific target organs/systemic toxicity following repeated exposure	Category 1 (central nervous system, liver)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (central nervous system, liver)	In the available rat repeated dose toxicity studies, clinical signs and symptoms including vacuolization of myelinated nervous tissue of the central nervous system, increased gamma-GTP/GOT/ bilirubin concentrations, and hypertrophy of centrilobular hepatocytes were found (Agricultural Chemical Registration Data (1990)). These effects were observed at dosing levels within the guidance value ranges for Category 1.

10	Aspiration hazard	Classification not possible	—	—	—	No data available
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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 48 hours EC50=0.29mg/L of the crustacea (Daphnia magna) (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	Although acute toxicity is Category 1 and bio-accumulation is low (log Kow=2.8(PHYSROP Database, 2005)), since there was no rapidly degrading (BIOWIN), it was classified into Category 1.