

GHS Classification

ID337

CAS 51276-47-2

Physical Hazards

2-Amino-4-[hydroxy(methyl)phosphinoyl]butyric acid; Glufosinate

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	Not applicable	—	—	—	Containing no chemical groups with explosive properties
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	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Classification not possible	—	—	—	No data available
11 Self-heating substances and mixtures	Classification not possible	—	—	—	No data available
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified (ammonium salts), Classification not possible (free acid)	—	—	—	Stable to water (water solubility: 500g/L or greater (ammonium salts) (Agricultural Chemical Registration Data)). As for free acid, classification is not possible due to lack of data.
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—" structure
16 Corrosive to metals	Classification not possible	—	—	—	Test methods applicable to solid substances with melting point of >55degC are not available (melting point: 215-218degC (ammonium salts) (Agricultural Chemical Registration Data), 229-231degC (free acid) (Merck (13th, 2001))).

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	Based on the rat LD50 (oral route) value of 1.510m/kg (Agricultural Chemical Registration Data (1984)).
1 Acute toxicity (dermal)	Not classified	—	—	—	Based on the absence of mortality at doses of 2,000 and 4,000mg/kg observed in the dermal studies with rats (Agricultural Chemical Registration Data (1984)).
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 4	Exclamation mark	Warning	Harmful if inhaled	Based on the rat LC50 (inhalation route) value of 1.26mg/L (Agricultural Chemical Registration Data (1986)).
2 Skin corrosion / irritation	Not classified	—	—	—	Based on the evidence of only slight irritation reactions (a mean Draize score of 0.2), which cleared up by 72 hours, observed in rabbit skin irritation tests (Agricultural Chemical Registration Data (1984)).
3 Serious eye damage / eye irritation	Not classified	—	—	—	In rabbit eye irritation tests, the affected animals exhibited the highest Draize score of 1 (conjunctival redness noted at 24 hours); the reactions resolved within 48 hours (Agricultural Chemical Registration Data (1986)).
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: No skin sensitizing potential was found in guinea-pig skin sensitization studies, reported in Agricultural Chemical Registration Data (1986).
5 Germ cell mutagenicity	Not classified	—	—	—	Based on negative data on reverse mutation tests in vitro (Agricultural Chemical Registration Data (1986, 2001)) and in vitro chromosome aberration tests (Agricultural Chemical Registration Data (1986)), and micronucleus tests on mouse bone marrow cells in vivo (Agricultural Chemical Registration Data (2004)).
6 Carcinogenicity	Not classified	—	—	—	There was no treatment-related evidence of tumor formation observed in 2-year (rats) and 18-month (mice) carcinogenicity studies (Agricultural Chemical Registration Data (1986)).
7 Toxic to reproduction	Not classified	—	—	—	Based on no evidence of adverse effects on reproduction and offspring development in rat reproduction studies and rat/rabbit teratogenicity studies, reported in Agricultural Chemical Registration Data (1986).
8 Specific target organs/systemic toxicity following single exposure	Category 2 (nervous system)	Health hazard	Warning	May cause damage to organs (nervous system)	In rat single dose toxicity studies, clinical signs and symptoms including passivity, impaired sense of equilibrium, prone/lateral position, tremors and convulsions were reported (Agricultural Chemical Registration Data (1984)). These effects were observed at dosing levels within the guidance value ranges for Category 2.
9 Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	In rat subacute toxicity studies, reduced body weight gains associated with decreased food consumption, and increased kidney weight were seen. However, classification is not possible since no other general symptoms or pathological findings were reported (Agricultural Chemical Registration Data (1986)).
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)	Classification not possible	-	-	-	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	No data available