

GHS Classification

ID629

Rotenone

CAS 83-79-4

Date Classified: Jul. 24, 2006 (Environmental Hazards: Mar. 31, 2006)

Physical Hazards

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 by regulated examination methods, though "Flammable" (ICSC (J) (2000))
8 Self-reactive substances and mixtures	Classification not possible	-	-	-	No data available
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (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 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 (but not chlorine and fluorine) and the oxygen is chemically bonded only to carbon and hydrogen (but not to other elements).
15 Organic peroxides	Not applicable	-	-	-	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 2	Skull and crossbones	Danger	Fatal if swallowed	Calculated based on rat LD50 values: 25 to 132 mg/kg (ACGIH 7th, 2001, DFGOT vol.19, 2003) and 60mg/kg (NTP TR320, 1988). Since the calculation value was lower than these lowest values, 25 mg/kg of lowest value was adopted, and set it as Category 2.
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	It was set as Category 2 based on rabbit LD50 value: 100 - 200mg/kg (DFGOT vol.19, 2003).
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)	Classification not possible	-	-	-	There was data with rat LCLo (30 minutes) value: 0.5mg/L (4-hour equivalent 0.06 mg/L) (RTECS (2006)). But category cannot be specified since LC50 value was unknown. Therefore, it cannot be classified since data is insufficient.
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	It was classified as Category 2 from description that it stimulated rabbit skin seriously (DFGOT (vol.19, 2003)).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	It was set as Category 2A from description that the eye of the rabbit was stimulated strongly (ACGIH (7th, 2001) and DFGOT (vol.19, 2003)).
4 Respiratory/skin sensitization	Classification not possible; Skin sensitization: Classification not possible	-	-	-	No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	Classification not possible due to lack of data
6 Carcinogenicity	Not classified	-	-	-	Since it was classified into A4 (ACGIH 7th, 2001) according to ACGIH, it carried out the outside of Category.
7 Toxic to reproduction	Not classified	-	-	-	Based on the description that it was not observed specific reproductive toxicity at dose causing general toxicity to parent animals in pregnant rat oral administration test (ACGIH (7th, 2001), DFGOT (vol.19, 2003), IRIS (2006) and NTP TR320 (1988)) and in rat two-generation reproduction test (IRIS (2006)), it was considered as on the outside of Category.

8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system); Category 3 (respiratory tract irritation)	Health hazard; Exclamation mark	Danger; Warning	Cause damage to organs (nervous system); May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	According to the description that nausea, vomiting and shivering are caused by acute exposures to humans (NTP TR320 (1988)), nerve systems were considered to be the target organs and set as Category 1 (nervous systems). Moreover, it was set as Category 3 (respiratory tracts irritation), based on the description that the airway is irritated (ICSC (J) (2000), HSFS (2000), and SITTIG (4th, 2002)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (liver, kidneys); Category 2 (bone marrow, gastrointestinal tract)	Health hazard	Danger; Warning	Causes damage to organs (liver, kidneys) through prolonged or repeated exposure; May cause damage to organs (bone marrow, gastrointestinal tract) through prolonged or repeated exposure	It was classified to as Category 1 (liver, kidney) because of description that the fatty degeneration of the kidney and liver was acknowledged by the dosage of the guidance value range of Category 1 in the oral feeding administration tests using the dog (ACGIH (7th, 2001)) and, because of description that the atrophy of the bone marrow and inflammation and hyperplasia of the forestomach were acknowledged by the dosage of the guidance value range of Category 2 in the oral feeding administration tests using the rat (NTP TR320 (1988), ACGIH (7th, 2001), DFGOT (vol.19, 2003)), it was classified to as Category 2 (marrow, gastrointestinal tract).
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=0.0283microL/L of fishes (Rainbow trout) (AQUIRE, 2003).
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=4,1 (PHYSPROP Database, 2005)).