

GHS Classification

ID38

CAS 108-98-5

Thiophenol

Date Classified: Jun. 20, 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	—	—	—	Containing no chemical groups with explosive properties
2 Flammable gases	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
5 Gases under pressure	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
6 Flammable liquids	Category 3	Flame	Warning	Flammable liquid and vapour	The flash point is 50degC (Gangolli (2nd, 1999)). Classified into Class 3 and Division 6.1 (UN#2237) (UN Recommendations on the Transport of Dangerous Goods)
7 Flammable solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not classified	—	—	—	Easily catches fire when heated according to HSDB (2006). Classified into Class 3 and Division 6.1(UN#2337) (UN Recommendations on the Transport of Dangerous Goods)
10 Pyrophoric solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
11 Self-heating substances and mixtures	Classification not possible	—	—	—	Test methods applicable to liquid substances are not available
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	—	—	—	Organic compounds containing no oxygen, fluorine and chlorine
14 Oxidizing solids	Not applicable	—	—	—	Classified as "liquid" according to GHS definition
15 Organic peroxides	Not applicable	—	—	—	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Not classified	—	—	—	Classified into Class 3 and Division 6.1 (UN#2337) (UN Recommendations on the Transport of Dangerous Goods)

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	Based on the rat LD50 (oral route) value of 46mg/kg (CERI Hazard Data 99-2 (2000)).
1 Acute toxicity (dermal)	Category 2	Skull and crossbones	Danger	Fatal in contact with skin	Based on the LD50 value of 134mg/kg representing the lower of the two testing data, the rat LD50 (dermal route) value of 300mg/kg (CERI Hazard Data 99-2 (2000)) and the rabbit LD50 (dermal route) value of 134mg/kg (CERI Hazard Data 99-2 (2000)).
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is "liquid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: vapour)	Category 1	Skull and crossbones	Danger	Fatal if inhaled	Based on the rat LC50 (inhalation of vapour) value of 33ppm (4 hours) (CERI Hazard Data 99-2 (2000) was lower than 90% of the saturated vapour concentration (1,320ppm) under a saturated vapour pressure of 0,133kPa (18,6degC) (CERI Hazard Data 99-2 (2000)), the substance was considered as "vapour containing substantially no mist" and was classified based on standard values expressed in ppm.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the description in the report on animal skin irritation tests (CERI Hazard Data 99-2 (2000)): "severe irritation of the skin" (though exposure duration is unknown). Also based on the description in PATTY (4th, 2000): "Dermal application of the substance induced inflammatory responses, with effects resolving by 24-48 hours." The substance is thus considered a skin irritant.
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the description in the report on rabbit eye irritation tests (CERI Hazard Data 99-2 (2000) and PATTY (4th, 2000)): "Severely irritating, causing conjunctival irritation and corneal lesions." "moderate to severe conjunctival injection, edema and discharge persisted for 3-4 days and healed by day 16 in all affected animals. Corneal opacity progressed on days 16-19, with gradual recovery observed in subsequent 1.5-2 months." The substance is thus considered severely irritating and classified into Category 2A.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Classification not possible	(Respiratory sensitization) - (Skin sensitization) -	(Respiratory sensitization) - (Skin sensitization)	(Respiratory sensitization) - (Skin sensitization) -	Respiratory sensitization: No data available Skin sensitization: No data available
5 Germ cell mutagenicity	Classification not possible	—	—	—	Insufficient data available
6 Carcinogenicity	Classification not possible	—	—	—	No data available
7 Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of external anomaly in pups at doses inducing maternal toxicity in rat teratogenicity tests, described in NTP DB (Access on Feb., 2006), CERI Hazard Data 99-2 (2000).

8	Specific target organs/systemic toxicity following single exposure	Category 2 (nervous system) Category 3 (respiratory tract irritation)	Health hazard and Exclamation mark	Warning	Causes damage to organs (nervous system) (Respiratory tract irritation) May cause respiratory irritation	Based on the human evidence including "choking, irritation of the eye/nose, headache" (MOE Risk Assessment vol.4 (2005)), and the evidence from animal studies including "somnia, coma, dyspnea", "irritation of the respiratory organs," "ataxia," "muscular weakness, ataxia, cyanosis" (RTECS (2004)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (kidneys)	Based on the evidence from animal studies including "renal tubular degeneration observed at 9, 18mg/kg" (ACGIH (7th, 2004)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
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 48 hours EC50=0.0044mg/L of the crustacea (Daphnia magna) (MOE eco-toxicity tests of chemicals, 1999).
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=2.52(PHYSROP Database, 2005)), since there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data)), it was classified into Category 1.