

GHS Classification

ID520

2,4-Xylenol

CAS 105-67-9

Date Classified: Sep. 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 "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	Not classified	—	—	—	Classified as flammable according to HSDB (2006). Classified into Division 6.1 (UN#2261 Xylenol (solid)) (UN Recommendation on the Transport of Dangerous Goods).
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	Not classified	—	—	—	Not pyrophoric when in contact with air at ordinary temperatures (flash point: 599degC (ICSC, 2004))
11 Self-heating substances and mixtures	Classification not possible	—	—	—	Test methods applicable to liquid substances are not available (melting point: 25.4-26degC (ICSC, 2004), test temperature: 140degC).
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	Not applicable	—	—	—	Organic compounds containing oxygen (but not fluorine and chlorine), with the oxygen bound to carbon and hydrogen (but not to other elements)
15 Organic peroxides	Not applicable	—	—	—	Organic compounds containing no "O-O-" structure
16 Corrosive to metals	Not classified	—	—	—	Classified into Division 6.1 (UN#2261 Xylenol (solid)) (UN Recommendation 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 5	—	Warning	May be harmful if swallowed	Based on the rat LD50 (oral route) value of 2,300mg/kg representing the lower of the two testing data, 3,200mg/kg (RTECS (2006)) and 2,300mg/kg (HSDB (2003)).
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on the rat LD50 (dermal route) of 1,040mg/kg (RTECS (2006)).
1 Acute toxicity (inhalation: gas)	Not applicable	—	—	—	Due to the fact that the substance is "liquid" or "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
2 Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the description in ICSC (J) (2003) of the human health effects: "Corrosive to the skin, respiratory tract and eye." Although classified into Category 1A-1C, the substance should be placed in Category 1A from the viewpoint of safety if further subclassification is needed.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in ICSC (J) (2003) of the human health effects: "Corrosive to the skin, respiratory tract and eye."
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Category 1	(Respiratory sensitization) — (Skin sensitization) Exclamation mark	(Respiratory sensitization) — (Skin sensitization) Warning	(Respiratory sensitization) — (Skin sensitization) May cause an allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the description in ICSC (J) (2003): "Repeated or prolonged contact may cause a skin sensitization reaction."
5 Germ cell mutagenicity	Classification not possible	—	—	—	Based on the absence of data on in vivo mutagenicity tests and no positive data on in vitro mutagenicity tests (several indices), described in NTP DB (Access on June 2006).
6 Carcinogenicity	Classification not possible	—	—	—	No data available
7 Toxic to reproduction	Classification not possible	—	—	—	No data available
8 Specific target organs/systemic toxicity following single exposure	Category 2 (respiratory organs)	Health hazard	Warning	May cause damage to organs (respiratory organs)	Corrosive to the skin, respiratory tract and eye; oral ingestion results in corrosion; inhalation of aerosols may lead to pulmonary edema (ICSC (J) (2003)). Since the priority rating of the referenced study is 2, these effects are classified into Category 2 (respiratory organs).

9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (kidneys, nervous system)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (kidneys,	Based on the evidence from animal studies: "at final sacrifice in the mid-dose female group, BUN levels were significantly higher than controls," "lethargy, prostration and ataxia in males and females" (IRIS (1990)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
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 2	—	—	Toxic to aquatic life	It was classified into Category 2 from 48 hours EC50=4.2mg/L of the crustacea (Daphnia magna) (MOE eco-toxicity tests of chemicals, 2001).
11 Hazardous to the aquatic environment (chronic)	Not classified	—	—	—	Since there was rapidly degrading (the decomposition by BOD: 91% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=2.3 (PHYSPROP Database, 2005)), it was classified into Not classified.