

GHS Classification

ID105

p-Xylene

CAS 106-42-3

Date Classified: May 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	-	-	-	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 27degC (c.c.) (ICSC, 2002) which is classified into Category 3. Classified into Class 3 and Packing Group II-III (UN#1307 (Xylene)) (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	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures; the auto-ignition temperature is 527degC (ICSC, 2002)
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 (UN Recommendations on the Transport of Dangerous Goods, UN#1307 (Xylene))

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 testing data of rat LD50 (oral route) of 4,029mg/kg (EHC 190 (1997)).
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
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 4	Exclamation mark	Warning	Harmful if inhaled	Based on the rat LC50 (4-hour inhalation) value of 4,740ppm (EHC 190 (1997)) was lower than 90 % of the saturated vapour concentration (8,600ppm) under a saturated vapour pressure of 0.87kPa (20degC), 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 rabbit skin irritation tests (EHC 190 (1997)): The substance causes skin irritation. Classified into Category 2 or 3, with the latter adopted according to the classification by EU (Category Xi).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the description in CERi Hazard Data 96-30 (iii) (1997): Xylene mixtures (Cas 1330-20-7) cause moderate eye irritation, and the acute effects of p-xylene on human health are considered essentially equivalent to those of xylene mixtures. The substance is considered "moderately irritating" to the eyes.
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	Not classified	-	-	-	Based on the absence of data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, and negative data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in CERi-NITE Hazard Assessment No.62 (2004), NTP DB (Access on October 2005) and IARC 71 (1999).
6 Carcinogenicity	Not classified	-	-	-	Due to the fact that the substance is classified as Category A4 by ACGIH (2001) and Group 3 by IARC (1999).
7 Toxic to reproduction	Category 1B	Health hazard	Danger	May damage fertility or the unborn child	Based on the description in the report on mouse teratogenicity tests (CERi-NITE Hazard Assessment No.62 (2004), CERi Hazard Data 96-30 (iii) (1997)): an increase in the incidence of a cleft palate is observed in the embryo at dosing levels not toxic to dams.
8 Specific target organs/systemic toxicity following single exposure	Category 2 (central nervous system) Category 3 (narcotic effects)	Health hazard and Exclamation mark	Warning	May cause damage to organs (central nervous system) (Narcotic effects) May cause drowsiness or dizziness	Based on the human evidence including "dizziness" (CERi-NITE Hazard Assessment No.62 (2004)), and the evidence from animal studies including "significant wakefulness, tremor, narcotic influence" (EHC 190 (1997)). The effects on experimental animals 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	-	-	-	Insufficient data available
10	Aspiration hazard	Category 1	Health hazard	Danger	May be fatal if swallowed and enters airways	Based on the description in ICSC (J) (2002): "May cause aspiration and chemical pneumonia if swallowed." Based on the fact that p-xylene is a hydrocarbon and has a dynamic viscosity of 0.704mm ² /s (25degC) (CERI calculated value).

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 96 hours LC50=1.7mg/L of the crustacea (Brown Shrimp) (CERI/NITE Hazard Assessment Report (2005) and others.).
11 Hazardous to the aquatic environment (chronic)	Category 2	Environment	-	Toxic to aquatic life with long lasting effects	Although acute toxicity was Category 2 and the bio-accumulation potential was low (log Kow=3.15(PHYSROP Database, 2005)), since there was no rapidly degrading (the decomposition by BOD: 38%(Existing Chemical Safety Inspections Data)), it was classified into Category 2.