GHS Classification

ID207 alpha-Methylstyrene

CAS 98-83-9 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	—	—	—	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 54degC (ICSC (2004)), which is classified into Category 3. Classified into Class 3, Packing Group III (UN#2303) (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 classified	—	—	—	No data available, though containing unsaturated bonds. Classified into Class 3 (UN#2303) (UN Recommendations on the Transport of Dangerous Goods).
9	Pyrophoric liquids	Not classified	—	—	—	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 574degC (ICSC, 2004)
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#2303) (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 5	—	Warning	May be harmful if swallowed	Based on the rat LD50 (oral route) value of 4,900mg/kg (SIDS (2002)).
1	Acute toxicity (dermal)	Not classified	—	—	—	Based on the rabbit LD50 (dermal route) of 16mL/kg (equivalent to 14,500mg/kg) (SIDS (2002)).
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:	Classification not possible	—	—	—	No data available
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 (CERI Hazard Data 2001-2 (2002)): "The substance induced moderate irritation" (though exposure duration is not presented).
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 (SIDS (2002)): "The substance induced moderate irritation."
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: Insufficient data are available, though human epidemiological evidence suggests sensitization for human skin (CERI Hazard Data 2001-40 (2002)).
5	Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Based on the absence of data on multi-generation mutagenicity tests, germ cell mutagenicity tests in vivo and germ cell genotoxicity tests in vivo, and positive data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in NTP DB (Access on Mar., 2006), the Ministry of Health, Labour and Welfare (1996) and CERI Hazard Data 2001-40 (2002).
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	Combined studies on repeated dose/reproductive/developmental toxicity suggested adverse developmental effects (litter loss and body weight reduction) at doses inducing maternal toxicity, described in the Ministry of Health, Labour and Welfare (1996) and SIDS (2002).
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 "irritation of the upper respiratory tract" and the evidence from animal studies: "within 5 minutes, lid closure was observed; by 90 minutes, impaired coordination occurred; by 4 hours, debility; by 5 hours, anesthetic leprosy was observed" (CERI Hazard Data 2001-40 (2002)). 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	Category 1 (central nervous system) Category 2 (kidneys, liver, respiratory organs)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (central nervous system) May cause damage to organs through prolonged or repeated exposure (kidneys, liver,	Based on the human evidence: "prolonged exposure by inhalation induces suppression of the central nervous system" (CERI Hazard Data 2001-40 (2002)). Also based on the evidence from animal studies including "increased hyaline droplet and basophilic changes in the renal tubular epithelium, eosinophilic changes in hepatocyte, elevated GPT" (the Ministry of Health, Labour and Welfare (1996)), "atrophy and hyperplasia of the nasal mucus-secreting glands, atrophy and hyperplasia of the olfactory epithelium" (MOE Risk Assessment vol. 4 (2005)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
10	Aspiration hazard	Category 1	Health hazard	Danger	May be fatal if swallowed and enters airways	Based on the fact that the substance is a hydrocarbon according to the GHS definition and has a dynamic viscosity of 1.032mm2/s (20degC).

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=2.6mg/L of the crustacea (Daphnia magna) (MOE eco-toxicity tests of chemicals, 1996).
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 (BCF=140(Existing Chemical Safety Inspections Data)), since there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data)), it was classified into Category 2.