GHS Classification

ID80 Ethyl acrylate

CAS 140-88-5 Date Classified: Apr. 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 2	Flame	Danger	Highly flammable liquid and vapour	The flash point is 9degC (c.c.) (ICSC, 2004) and the boiling point is 99degC which is classified into Category 2. Those containing stabilizers are classified into Class 3 and Packing Group II(UN#1917) (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	Classification not possible	-	-	-	Classification not possible due to lack of data, though containing unsaturated bonds. Those containing stabilizers are classified into Class 3 (UN Recommendations on the Transport of Dangerous Goods, UN#1917)
9	Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 345degC (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 oxygen (but not fluorine and chlorine), with the oxygen bound to carbon and hydrogen (but not to other elements)
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	Classification not possible	-	-	-	No data available. Those containing stabilizers are classified into Class 3 (UN Recommendations on the Transport of Dangerous Goods, UN#1917)

Health Hazards

Hazard class		Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 4	Exclamation mark	Warning	Harmful if swallowed	Based on the LD50 value of 667mg/kg calculated from the testing data of rat LD50 (oral route) of 1,000 mg/kg (ECETOC JACC28 (1994)), 550 mg/kg (ECETOC JACC28 (1994)), 1,020mg/kg (ACGIH 7th, 2001) and 1,799mg/kg (MOE Risk Assessment vol.2 (2003)).
1	Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on the rabbit LD50 (dermal route) value of 1,790 mg/kg representing the lower of the two testing data, 1,790 mg/kg (ACGIH (7th, 2001)) and 1,800mg/kg (ECETOC JACC28 (1994)).
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 3	Skull and crossbones	Danger	Toxic if inhaled	Based on the LC50 value (4 hours) of 1,410ppm, representing the lower of the testing data of rat LC50 (4 hour inhalation of vapour) of 8.92mg/L (ECETOC JACC28 (1994)) and 5.78mg/L (MOE Risk Assessment vol. 2 (2003)), was lower than 90% of the saturated vapor concentration (50,900ppm) under a saturated vapour pressure of 38.6mmHg (25degC) (equivalent to 5,140Pa at 25degC) (HSDB (2005)), 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 1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the results of rabbit temporary skin irritation tests (CERI-NITE Hazard Assessment No. 59 (2004)): The substance, when applied for 4 hours, causes the formation of crusts, necrotic mass and severe erythema/edema associated with cicatrices; it is considered "corrosive."
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the results of rabbit temporary eye irritation tests (CERI-NITE Hazard Assessment No. 59 (2004)): 0.1 mL and 0.5mL administrations cause necrosis and severe necrosis, respectively.
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 allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Based on the results of guinea pig skin sensitization tests (CERI-NITE Hazard Assessment No.59 (2004)) (positive) and with reference to the EU Risk Phrase.
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, positive data on somatic cell mutagenicity tests in vivo (micronucleus tests) and the absence of data on germ cell genotoxicity tests in vivo, described in CERI-NITE Hazard Assessment No.59 (2004).
6	Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Group 2B by IARC (1999).
7	Toxic to reproduction	Classification not possible	-	-	-	Insufficient data available (no data available on the reproductive function and fertility potential of parent animals)

8	Specific target organs/systemic toxicity following single exposure	Category 1 (nervous system) Category 3 (narcotic effects, respiratory tract irritation)	Health hazard and Exclamation mark	Danger Warning	Causes damage to organs (nervous system) (Respiratory tract irritation) May cause respiratory irritation (Narcotic effects) May cause drowsiness or dizziness	Based on animal studies including "lethargy, expansion of auricular blood vessels, tremor, diaphragmatic convulsions, dyspnea, cyanosis, a decrease in body temperature" (CERI-NITE Hazard Assessment No.59 (2004)), "dyspnea, respiratory irritation causing dyspnea" (CERI Hazard Data 97-14 (1997)). In addition to adverse effects on the nervous systems, lethargy is also observed. 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 (nervous system, respiratory organs)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (nervous system, respiratoy organs)	Based on the human evidence including "autonomic ataxia" (CERI-NITE Hazard Assessment No.59 (2004)), and the evidence from animal studies including "nasal mucosal inflammation, olfactory epithelium degeneration" (CERI-NITE Hazard Assessment No.59 (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 2	-	-	Toxic to aquatic life	It was classified into Category 2 from 96 hours LC50=1.16mg/L of the fish (Oryzias Latipest) (CERI/NITE Hazard Assessment Report, 2004).
11	Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition by TOC: 92.6%(Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=1.32(PHYSPROP Database, 2005)), it was claasified into Not classified.