

GHS Classification

ID81

Methyl acrylate

CAS 96-33-3

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 -2.8degC (c.c.) (ICSC, 2004) and the boiling point is 80.5degC, which is classified into Category 2. Those containing stabilizers are classified into Class 3 and Packing Group II (UN#1919) (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#1919)
9 Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 468degC (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#1919)

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 3	Skull and crossbones	Danger	Toxic if swallowed	Based on the LD50 value of 277 mg/kg calculated from the testing data of rat LD50 (oral route) of 277mg/kg, 300mg/kg and 765mg/kg (ECETOC JACC37 (1998)).
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on the rat LD50 (dermal route) of 1,250 mg/kg (ECETOC JACC 37, 1998)
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 rat LC50 (4 hours) value of 1,200ppm, calculated from the testing data of rat LC50 (inhalation of vapour) of 3.58mg/L, 5.7mg/L, 6.5mg/L and 4.83mg/L (ECETOC JACC 37 (1998)), was lower than 90% of the saturated vapor concentration (114,000ppm) under a saturated vapour pressure of 86.6mmHg (25degC) (equivalent to 11,500Pa 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 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the evidence of rabbit primary skin irritation tests (CERI Hazard Data 98-10 (1999)) (necrosis is observed) and lack of data for subclassification, although the substance should be placed in Category 1A from the viewpoint of safety.
3 Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the guidelines: Substances should be classified into Category 1 if the results of reliable exposure tests suggest that they are corrosive to human or animal skin. Originally classified into Category 2, based on the description in CERI Hazard Data 98-10 (1999) (extremely irritating to rabbit eyes) and ECETOC JACC No. 37 (1998) (severely irritating to the eyes).
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 classification by the Japan Society for Occupational Health and the Japanese Society of Occupational Allergy (Skin Sensitizing Substances).
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) (intraperitoneal administration) and the absence of data on germ cell genotoxicity tests in vivo, described in CERINITE Hazard Assessment No.98-10 (1999).
6 Carcinogenicity	Not classified	-	-	-	Due to the fact that the substance is classified as Group 3 by IARC (1999), Category A4 by ACGIH (2005) and Group D by EPA (1990).
7 Toxic to reproduction	Classification not possible	-	-	-	No data available

8	Specific target organs/systemic toxicity following single exposure	Category 1 (central nervous system) Category 3 (respiratory tract irritation)	Health hazard and Exclamation mark	Danger Warning	Causes damage to organs (central nervous system) (Respiratory tract irritation) May cause respiratory irritation	Based on human evidence including "coma, convulsions" (CERI Hazard Data 98-10 (1999)), and the description in MOE Risk Assessment vol. 2 (2003): "Tearing properties are observed and the vapor irritates the eye, respiratory tract and skin."
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs) Category 2 (kidneys)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (respiratory organs) May cause damage to organs through prolonged or repeated exposure (kidneys)	Based on the evidence from animal studies including "olfactory atrophy, lack of the columnar cell layer associated with hyperplasia of stratified basal cells," "an increase in the relative weight of the kidneys, an increase in the incidence of renal disease" (MOE Risk Assessment vol. 2 (2003)). The effects on experimental animals are observed at dosing levels within the guidance value ranges for Category 1 (Respiratory Organs) and Category 2 (Kidneys).
10	Aspiration hazard	Classification not possible	-	-	-	No data available

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rationale 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=1.1mg/L of the fish (Sheepshead Minnow) (CERI/NITE Hazard Assessment Report (preliminary version), 2006).
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition by TOC: 100%(Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=0.8(PHYSROP Database, 2005)), it was classified into Not classified.