

GHS Classification

ID502

n-Butyl methacrylate

CAS 97-88-1

Date Classified: Aug. 22, 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 41 degC (ICSC (2000)), which is classified into "Category 3." Those containing stabilizers are classified into Class 3 (UN#2227) (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 (olefin). Those containing stabilizers are classified into Class 3 (UN#2227) (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 290degC (ICSC, 1999).
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#2227) (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)	Not classified	—	—	—	Based on the rat LD50 (oral route) value of 16,000mg/kg representing the lower of the two testing data, 16,000mg/kg and 20,000mg/kg (CERI Hazard Data 2001-49 (2002)).
1 Acute toxicity (dermal)	Not classified	—	—	—	Based on the rabbit LD50 (dermal route) value of 11,300mg/kg (CERI Hazard Data 2001-49 (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: dust, mist)	Not classified	—	—	—	Because the rat LC50 (inhalation) value of 28.5mg/L (equivalent to 4,810ppm) (CERI Hazard Data 2001-49 (2002)) exceeded the saturated vapour concentration (2,790ppm) under a saturated vapour pressure of 282Pa (25degC), the substance was considered as "mist exposure," and the obtained LC50 exceeded the upper limit value of Category 4 (5mg/L) by more than 2.5 fold.
2 Skin corrosion / irritation	Category 3	—	Warning	Causes mild skin irritation	Based on the description in the report on rabbit skin irritation tests (4 hour application) (CERI Hazard Data 2001-49 (2002)): "Mild irritation."
3 Serious eye damage / eye irritation	Category 2B	—	Warning	Causes eye irritation	Based on the description in the report on rabbit eye irritation tests evaluated according to the Draize scheme (CERI Hazard Data 2001-49 (2002)): "Mild 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: Classification not possible due to the insufficiency of data. No evidence of skin sensitization was observed in guinea pig skin sensitization tests evaluated according to Maximization Method and Split Adjuvant Method (CERI Hazard Data 2001-49 (2002)), whereas PATTY (4th, 2001) and EU Risk Phrase (R43) suggest a potential for sensitization.
5 Germ cell mutagenicity	Not classified	—	—	—	Based on the absence of data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, negative data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in Report by the Ministry of Health, Labour and Welfare (1998), CERI Hazard Data 2001-49 (2002) and NTP DB (Access on Mar., 2006).
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	Based on the evidence of decreased numbers of corpora lutea and implantation sites observed at doses causing parental toxicity, described in Report by the Ministry of Health, Labour and Welfare (1998) and CERI Hazard Data 2001-49 (2002).

8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	(Respiratory tract irritation) May cause respiratory irritation	Based on the evidence from animal studies including "respiratory irritation" (ECETOC JACC36 (1996)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (spleen)	Health hazard	Warning	May cause damage to organs through prolonged or repeated exposure (spleen)	Based on the evidence from animal studies including "atrophy of the red pulp of spleen" (Report by the Ministry of Health, Labour and Welfare (1998)). 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 96 hours LC50=5570microg/L of the fish (<i>Oryzias Latipest</i>) (MOE Risk Assessment vol. 2 (2003) and others.).
11 Hazardous to the aquatic environment (chronic)	Not classified	—	—	—	Since there was rapidly degrading (the decomposition by BOD: 88% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=2.88 (PHYSPROP Database, 2005)), it was classified into Not classified.