

GHS Classification

ID918

Butane

CAS 106-97-8

Date Classified: Mar. 23, 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	-	-	-	Gas (GHS definition)
2 Flammable gases	Category 1	-	Danger	Extremely flammable gas	Ignitable when in a mixture of 13% or less by volume in air. UNRTDG Class: 2.1
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not classified	-	-	-	UNRTDG Class: 2.1
5 Gases under pressure	Liquefied gas	Gas cylinder	Warning	Contains gas under pressure; may explode if heated	Critical temp: >-50degC (Partially liquid at temperatures above -50degC)
6 Flammable liquids	Not applicable	-	-	-	Gas (GHS definition)
7 Flammable solids	Not applicable	-	-	-	Gas (GHS definition)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
9 Pyrophoric liquids	Not applicable	-	-	-	Gas (GHS definition)
10 Pyrophoric solids	Not applicable	-	-	-	Gas (GHS definition)
11 Self-heating substances and mixtures	Not applicable	-	-	-	Gas (GHS definition)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	Gas (GHS definition)
13 Oxidizing liquids	Not applicable	-	-	-	Gas (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Gas (GHS definition)
15 Organic peroxides	Not applicable	-	-	-	Gas (GHS definition)
16 Corrosive to metals	Not classified	-	-	-	UNRTDG Class: 2.1. Non-corrosive to metals (HSDB, access on Oct 2005)

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Not applicable	-	-	-	Gas (GHS definition)
1 Acute toxicity (dermal)	Not applicable	-	-	-	Gas (GHS definition)
1 Acute toxicity (inhalation: gas)	Not classified	-	-	-	It was considered as the outside of Category based on rat LC50 (4 hours) level: 277374ppm (ACGIH (7th, 2001), DFGOT vol.20 (2003), PATTY (4th, 1994), industrial hygiene academic society recommendation (1993)).
1 Acute toxicity (inhalation: dust, mist)	Not applicable	-	-	-	Gas (GHS definition)
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Gas (GHS definition)
2 Skin corrosion / irritation	Classification not possible	-	-	-	No data available
3 Serious eye damage / eye irritation	Classification not possible	-	-	-	Since data was insufficient, we could not classify it. We found a statement that the eyes of the rabbits were not stimulated (DFGOT vol.20 (2003)), and the ocular irritational property was not reported as human cases of the exposure to vapor. However, we found no statement which negates hazard to human clearly. Therefore we could not classify it for the insufficiency of data.
4 Respiratory/skin sensitization	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	There was a negative result (DFGOT vol.20 (2003), PATTY (4th, 1994), NTP DB (Access on Oct 2005)) by the reverse mutation test using bacteria, but there was only data of an in vitro examination. So it was not able to be classified.
6 Carcinogenicity	Classification not possible	-	-	-	No data available
7 Toxic to reproduction	Classification not possible	-	-	-	Classification not possible due to lack of data

8	Specific target organs/systemic toxicity following single exposure	Category 3 (narcotic effects)	Exclamation mark	Warning	May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects)	From description in ACGIH (7th, 2001), DFGOT vol.20 (2003), PATTY (4th, 1994) and Society for Occupational Health Recommendation of Occupational Exposure (1993) that concentrated suction indicates anesthetic actions or central nervous system depression in humans, it was thought that there were anesthetic actions and was set as Category 3.
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	There is description that toxicity was not observed in the repeated inhalation exposure test (mixture with isobutane or pentane) using the rat (DFGOT vol.20 (2003)). On the other hand, although it may affect the central nervous systems because of the description that the euphoria and the hallucination were observed in many of examples of repetitive inhalation exposure for the purpose of anesthesia to human (DFGOT vol.20 (2003)), there is no other data which suggests the influence on the central nervous systems in repeated exposure, therefore we could not classify it since the lack of the data.
10	Aspiration hazard	Not applicable	-	-	-	Gas (GHS definition)

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Classification not possible	-	-	-	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	No data available.