

GHS Classification

ID382

1-Chloro-1,1-difluoroethane; HCFC-142b

CAS 75-68-3

Date Classified: Jun. 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	—	—	—	Classified as "gas" according to GHS definition
2 Flammable gases	Category 1	Flame	Danger	Extremely flammable gas	The lower explosion limit is 6.2vol% (ICSC (1999)). Classified into Division 2.1 (UN#2517) (UN Recommendations on the Transport of Dangerous Goods)
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Not classified	—	—	—	Classified into Division 2.1(UN#2517) (UN Recommendations on the Transport of Dangerous Goods)
5 Gases under pressure	Liquefied gas	gas cylinder	Warning	Contains gas under pressure; may explode if heated	The boiling point is -9degC (HSDB (2006)), and the critical temperature is 137.1degC (HSDB (2006)) - i.e., liquefied gas. Classified into Divisions 2.1 (UN#2517) (UN Recommendations on the Transport of Dangerous Goods)
6 Flammable liquids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
7 Flammable solids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
8 Self-reactive substances and mixtures	Not applicable	—	—	—	Classified as "gas" according to GHS definition
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
10 Pyrophoric solids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
11 Self-heating substances and mixtures	Not applicable	—	—	—	Classified as "gas" according to GHS definition
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	—	—	—	Classified as "gas" according to GHS definition
13 Oxidizing liquids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
14 Oxidizing solids	Not applicable	—	—	—	Classified as "gas" according to GHS definition
15 Organic peroxides	Not applicable	—	—	—	Classified as "gas" according to GHS definition
16 Corrosive to metals	Classification not possible	—	—	—	Test methods applicable to gaseous substances are not available

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 >5,000mg/kg (EHC 139 (1992)).
1 Acute toxicity (dermal)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: gas)	Not classified	—	—	—	Based on the rat LC50 (inhalation exposure) value of 128,000ppm (SIDS (2004)).
1 Acute toxicity (inhalation: dust, mist)	Not applicable	—	—	—	Due to the fact that the substance is "gas" according to the GHS definition and inhalation of its vapour is not expected.
1 Acute toxicity (inhalation: dust, mist)	Not applicable	—	—	—	Due to the fact that the substance is "gas" according to the GHS definition and inhalation of its dust/mist is not expected.
2 Skin corrosion / irritation	Classification not possible	—	—	—	No data available
3 Serious eye damage / eye irritation	Category 2B	—	Warning	Causes eye irritation	Based on the description in the report on rabbit eye irritation tests (SIDS (2004)): "Slight conjunctival swelling with some discharge," suggesting that the substance is a mild eye irritant.
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: No data available
5 Germ cell mutagenicity	Not classified	—	—	—	Based on negative result in multi-generation mutagenicity tests (dominant lethal tests) and somatic cell mutagenicity tests in vivo (chromosome aberration tests), and the absence of data on germ cell mutagenicity tests in vivo, described in SIDS (2004), EHC 139 (1992) and DFGOT vol. 1
6 Carcinogenicity	Classification not possible	—	—	—	Classification not possible given the insufficiency of data for use in classification, along with the absence of existing classification.
7 Toxic to reproduction	Not classified	—	—	—	Based on no evidence of adverse effects on genitals observed in two repeated dose toxicity studies (13-week inhalation study in one sex and 2-year inhalation study in both sexes), described in SIDS. A teratogenicity study in rats (inhalation) is also available that suggests delayed ossification of the occipital bones. However, the author concluded the effects were not attributable to the test substance.
8 Specific target organs/systemic toxicity following single exposure	Classification not possible	—	—	—	The evidence of adverse effects on respiratory organs, nervous system and death are reported. However, the dosages of all tests (128,000ppm, 200,000ppm, 400,000ppm) exceed the guidance value.
9 Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	Due to the fact that the lowest dosages of all tests (1,000ppm) exceed the guidance value.
10 Aspiration hazard	Not applicable	—	—	—	Due to the fact that the substance is a gas at ordinary temperatures.

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 3	-	-	Harmful to aquatic life	It was classified into Category 3 from 96 hours LC50=36mg/L of the fish (Rainbow Trout) (EHC139, 1992).
11 Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Although acute toxicity was Category 3 and the bio-accumulation potential was low (log Kow=1.66(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 3.