

GHS Classification

ID156

Tetrafluoroethylene

CAS 116-14-3

Date Classified: Feb. 20, 2007 (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 10vol% (NFPA (13th, 2002)). Those containing stabilizers are classified into Division 2.1 (UN#1081) (UN Recommendations on the Transport of Dangerous Goods).
3 Flammable aerosols	Not applicable	—	—	—	Not aerosol products
4 Oxidizing gases	Classification not possible	—	—	—	No data available. Those containing stabilizers are classified into Division 2.1 (UN#1081) (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 -75.9degC (Lide (84th, 2003)) and the critical temperature is 33.3degC (HSDB (2006)) - i.e., "liquefied gas." Those containing stabilizers are classified into Division 2.1 (UN#1081) (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)	Classification not possible	—	—	—	No data available
1 Acute toxicity (dermal)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: gas)	Not classified	—	—	—	Based on the LC50 value of 27,900ppm calculated from the testing data of rat LC50 (4-hour inhalation of gas) of 25,000ppm (ACGIH (7th, 2001)), 31,000ppm (CERH Hazard Data 2000-18 (2001)), 40,000ppm (ECETOC JACC42 (2003)), 45,000ppm (ACGIH (7th, 2001)).
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 HSDB (2005) of human exposure: "eye contact with the substance causes slight 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: No data available
5 Germ cell mutagenicity	Not classified	—	—	—	Based on the absence of data on multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, and negative data on somatic cell mutagenicity tests in vivo (micronucleus tests), described in NTP DB (Access on Feb., 2006), IARC 71 (1999), CERH Hazard Data 2000-18 (2001) and ACGIH (7th, 2001).
6 Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Category R by NTP (2005), Category A3 by ACGIH (2001) and Group 2B by IARC (1999).
7 Toxic to reproduction	Classification not possible	—	—	—	Insufficient data available
8 Specific target organs/systemic toxicity following single exposure	Category 2 (kidneys, liver)	Health hazard	Warning	May cause damage to organs (kidneys, liver)	Based on the evidence from animal studies including "increases in BUN, urinary output, glycorrhea, alkalinephosphatase activity and gamma-glutamyltranspeptidase activity at 4,000 and 6,000ppm" (ACGIH (4th, 2001)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.
9 Specific target organs/systemic toxicity following repeated exposure	Category 2 (kidneys)	Health hazard	Warning	Causes damage to organs through prolonged or repeated exposure (kidneys)	Based on the evidence from animal studies including "renal tubular degeneration in males at 625ppm" (NTP TR450 (1997)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2.

10	Aspiration hazard	Not applicable	-	-	-	Due to the fact that the substance is a gas at ordinary temperatures.
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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