

GHS Classification

ID782

ferrocene

CAS 102-54-5

Date Classified: Jul. 24, 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 classified	-	-	-	Fireproofing agents and not explosive products, though containing Fe-C bonds.
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Classification not possible	-	-	-	No data available
8 Self-reactive substances and mixtures	Type G	-	-	-	Not the transportation prohibition substance and not included in UNRTDG No. 3221 to 3241, though it contains unsaturated bonds as chemical groups associated with self-reactive properties present and Fe-C bonds as chemical groups with explosive properties present.
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Not classified	-	-	-	It is used as a flameproofing agent.
11 Self-heating substances and mixtures	Not classified	-	-	-	It is used as a fire-extinguishing agent.
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Water solubility is measured although iron is included. There is no reactive with water. There is also a statement which is not decomposed with water, and is not decomposed even if it boils with sodium hydroxide solution or concentrated hydrochloric acid 10% (chemical dictionary (2003)).
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Organic compounds containing oxygen and halogen.
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid substances are not available.

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 4	Exclamation mark	Warning	Harmful if swallowed	SPECIES: Rat ENDPOINT: LD50 VALUE: 1320 mg/kg REFERENCE SOURCE: PATTY (5th, 2001)
1 Acute toxicity (dermal)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	It was classified as Category 3 from the statement of skin irritation on humans (PATTY (5th, 2001)).
3 Serious eye damage / eye irritation	Category 2B	-	Warning	Causes eye irritation	Based on the statement of the eye irritations to humans, it was set as Category 2B.
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)-	No data available
5 Germ cell mutagenicity	Classification not possible	-	-	-	Although there were the negative statements (PATTY (5th, 2001)) for the in vitro tests of Ames test and the sister chromatid exchange tests, we did not have in vivo data. Therefore we could not classify it.
6 Carcinogenicity	Classification not possible	-	-	-	There is a statement that cancer was acknowledged at the injection site in the test using rats by intramuscular injections (PATTY (5th, 2001)) and that carcinogenesis is not acknowledged by the oral administration (capsule) to dogs (HSDB (2005)). But there is no report of evaluation organizations, such as IARC. Therefore, it cannot be classified.

7	Toxic to reproduction	Classification not possible	-	-	-	Although there is a statement of testicular hyperplasia in dog administration test for six-month (ACGIH (2001)), it cannot be classified due to insufficient data.
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	may cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract irritation)	It is classified into Category 3 (respiratory irritation) from the statement of respiratory irritation to humans (PATTY (5th, 2001)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 2 (nostril)	Health hazard	Warning	may cause damage to organs (nostril) through prolonged or repeated	There is no report in human. It was classified into Category 2 (nasal cavity) from the statement that necrotic inflammation, atypical, and reproduction were acknowledged in the nose within the guidance value of Category 2 in the inhalation exposure test of a rat and a mouse (PATTY (5th, 2001)).
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)	Classification not possible	-	-	-	No data available
11 Hazardous to the aquatic environment (chronic)	Classification not possible	-	-	-	No data available.