

## GHS Classification

**ID123**

**CAS 151-50-8**

**Physical Hazards**

**Potassium cyanide**

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 2006)

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 "solid" according to GHS definition
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Classified as "solid" according to GHS definition
5 Gases under pressure	Not applicable	-	-	-	Classified as "solid" according to GHS definition
6 Flammable liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
7 Flammable solids	Not classified	-	-	-	Non-flammable (ICSC, 2004)
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	-	-	-	Non-combustible (ICSC, 2004)
11 Self-heating substances and mixtures	Not classified	-	-	-	Non-combustible (ICSC, 2004)
12 Substances and mixtures, which in contact with water, emit flammable gases	Not classified	-	-	-	Stable to water - water solubility: 71.8g/100mL, ICSC (2004)
13 Oxidizing liquids	Not applicable	-	-	-	Classified as "solid" according to GHS definition
14 Oxidizing solids	Not applicable	-	-	-	Inorganic compounds containing no oxygen and halogen
15 Organic peroxides	Not applicable	-	-	-	Not organic compounds
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 2	Skull and crossbones	Danger	Fatal if swallowed	Based on the rat LD50 (oral route) value of 10mg/kg representing the lower of the two testing data, 10mg/kg and 7.49 mg/kg (CICAD 61 (2004)).
1 Acute toxicity (dermal)	Category 1	Skull and crossbones	Danger	Fatal in contact with skin	Based on the testing data of rabbit LD50 (dermal route) of 22.3mg/kg (CICAD 61 (2004)).
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Due to the fact that the substance is "solid" according to the GHS definition and inhalation of its gas is not expected.
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 3	-	Warning	Causes mild skin irritation	Based on the following description found in CICAD (2004): "Cyanide is slightly irritating to the skin and eye", although no data is available for potassium cyanide. Although the present substance is a salt of a weak acid and a strong base and the pH of its aqueous solution is expected to exceed 11.5, no description specifying the pH could be found, so classification by pH was not conducted.
3 Serious eye damage / eye irritation	Category 2A-2B	Exclamation mark	Warning	Causes serious eye irritation	Based on the following description found among the data on cyanide in CICAD (2004): "conjunctival hyperaemia with mild chemosis, lacrimation, photophobia, and tingling sensation", although the substance should be placed in Category 2A from the viewpoint of safety. Although the present substance is a salt of a weak acid and a strong base and the pH of its aqueous solution is expected to exceed 11.5, no description specifying the pH could be found, so classification by pH was not conducted.
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	Classification not possible	-	-	-	Based on the absence of data on multi-generation mutagenicity tests, in vivo germ/somatic cell mutagenicity tests, in vivo germ/somatic cell genotoxicity tests, and no strong positive data on in vitro mutagenicity tests (several indices), described in CICAD 61 (2004).
6 Carcinogenicity	Classification not possible	-	-	-	No data available
7 Toxic to reproduction	Classification not possible	-	-	-	Insufficient data available
8 Specific target organs/systemic toxicity following single exposure	Category 2 (central nervous system)	Health hazard	Warning	May cause damage to organs (central nervous system)	Based on the human evidence including "coma, bradypnea, parkinsonian syndromes (following ingestion)", "severe damage to the putamen and globus pallidus (observed in autopsy specimens)", "coma, apnea, metabolic acidosis, convulsions (within an hour of exposure)" (HSDB (2000)). A brain disorder is indicated - which is considered an unusual case, given the absence of similar data and the description to the effect that "this clinical report is the first of its kind concerning Parkinson's disease in relation to the toxicity of cyanogen compounds." The effects are observed in the central nervous system.

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (thyroid gland, kidneys, liver, spleen, central nervous system)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (thyroid gland, kidneys, liver, spleen, central nervous system)	Based on the evidence from animal studies including "degeneration of the kidneys, liver and thyroid gland," "cytoplasmic vacuolation possibly reflecting edematous degeneration of the epithelial cells lining proximal convoluted tubules; spheroids in the anterior horn of spinal cord, loss of nerve cells in the hippocampus, Purkinje cell damage, neuropathological findings including cerebellar deficiency" (CICAD 61 2004). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1.
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 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96 hours LC50=0.113mg/L of the crustacea (Mysid Shrimp)) (ECETOC TR91, 2003).
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Since acute toxicity was Category 1 and an underwater action and bio-accumulation were unknown, it was classified into Category 1.