GHS Classification

ID284 Mercury diacetate

CAS 1600-27-7

Date Classified: Jun. 20, 2006 (Environmental Hazards: Mar. 31, 2006)

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Physical Hazards

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, 2000)
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, 2000)
11	Self-heating substances and mixtures	Not classified	–	–	–	Non-combustible (ICSC, 2000)
12	Substances and mixtures, which in contact with water, emit flammable gases	Not classified	–	–	–	Stable to water (water solubility: 40g/100mL (20degC), ICSC (2000))
13	Oxidizing liquids	Not applicable	–	–	–	Classified as "solid" according to GHS definition
14	Oxidizing solids	Not classified	–	–	–	No data available, though being organic compounds containing oxygen bound to carbon and hydrogen. Classified into Division 6.1 (UN#1629) (UN Recommendations on the Transport of Dangerous Goods)
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 2	Skull and crossbones	Danger	Fatal if swallowed	Based on the rat LD50 (oral route) value of 41mg/kg (RTECS (2005)).
1	Acute toxicity (dermal)	Category 3	Skull and crossbones	Danger	Toxic in contact with skin	Based on the rabbit LD50 (dermal route) value of 570mg/kg (RTECS (2005)).
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:	Classification not possible	–	–	–	No data available
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	–	–	–	No data available
2	Skin corrosion / irritation	Category 1A-1C	Corrosion	Danger	Causes severe skin burns and eye damage	Based on the description in ICSC (J) (2000): The substance causes "skin burn and pain; Corrosive to the eye/skin/respiratory tract; Oral ingestion produces corrosive effects." The substance is thus considered corrosive to the skin and classified into Category 1A-1C. However, it should be placed in Category 1, if further subclassification is needed.
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in ICSC (J) (2000): The substance causes "skin burn and pain; Corrosive to the eye/skin/respiratory tract; Oral ingestion causes corrosive effects." The substance is thus considered corrosive to the skin and classified into Category 1.
4	Respiratory/skin sensitization	Respiratory sensitization: Classification not possible Skin sensitization: Category 1	(Respiratory sensitization) – (Skin sensitization) Exclamation mark	(Respiratory sensitization) – (Skin sensitization) Warning	(Respiratory sensitization) – (Skin sensitization) May cause allergic skin reaction	Respiratory sensitization: No data available Skin sensitization: Mercury is classified into "Skin Sensitizing Substance" by the ad hoc committee of the Japanese Society of Occupational Allergy, and "Skin Sensitizing Substance: Group 1"* by the Japan Society for Occupational Health. These classifications, though not specifying mercury acetate, seem to include mercury compounds. Mercury acetate, which is a mercury compound, should thus cause skin sensitization. * There is a provision to the effect that "the category refers to the substance concerned and its compounds, but does not identify all substances causing respiratory/skin sensitization.
5	Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Based on positive data on somatic cell mutagenicity tests in vivo and the absence of data on germ cell genotoxicity in vivo. Positive results (as mercury compounds) are also available in multi-generation mutagenicity tests and germ cell mutagenicity tests in vivo, but not used for effects assessment.
6	Carcinogenicity	Not classified	–	–	–	Due to the fact that the substance is classified as Category A4 (as metal mercury and inorganic mercury compounds) by ACGIH (2001) and Group 3 (as metal mercury and inorganic mercury compounds) by IARC (1993).
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of adverse developmental effects on pups (though no data are available on maternal toxicity), described in ATSDR (1999), CICAD 50 (2003) and EHC 118 (1991). As for the reproductive toxicity of inorganic mercury compounds, refer to "ID285, Mercury Chloride (II), CAS 7487-94-7."

8	Specific target organs/systemic toxicity following single exposure	Category 2 (kidneys, respiratory organs)	Health hazard	Warning	Causes damage to organs (kidneys, respiratory organs)	Based on the description in ICSC (J): the substance causes "corrosion of the respiratory tract; oral ingestion causes corrosion; may adversely affect the kidney" (ICSC (J) (2000)). Classified as priority 2 by ICSC (J). Note: According to CICAD 50 (2003), "renal failure, cardiovascular collapse and severe digestive organ damage are considered to be the causes of death following oral exposure to inorganic mercury. Most common findings among these are gastrointestinal tract lesion and renal failure. Exposure to inorganic mercury appears to induce nephrotic syndrome in humans."
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (kidneys) Category 2 (nervous system)	Health hazard	Danger Warning	Causes damage to organs through prolonged or repeated exposure (kidneys) May cause damage to organs through prolonged or repeated exposure (nervous system)	Based on the description in ICSC (J): the substance "adversely affects the central/peripheral nervous systems and kidney, may cause ataxia, sense/memory disorder, tremor, muscular weakness and kidney damage" (ICSC (J) (2000)). Also based on the evidence from animal studies: "partial hypertrophy and dilation of proximal renal tubules were initially observed, which progressed to increased dilation, hyaline cast, fibrosis and inflammation, and resulted eventually in cyst, extensive fibrosis and alterations in the glomerulus" (ATSDR (1999)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1. Classified as priority 2 by ICSC. Note: According to CICAD 50 (2003), "renal failure, cardiovascular collapse and severe digestive organ damage are considered to be the causes of death following oral exposure to inorganic mercury. Most common findings among these are gastrointestinal tract lesion and renal failure. Exposure to inorganic mercury appears to induce nephrotic syndrome in humans."
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=0.06mg/L of the crustacea (Glass 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 it was a metallic compound, and since an underwater action and bio-accumulation were unknown, it was classified into Category 1.