

## GHS Classification

**ID425**

**CAS 10112-91-1**

### Physical Hazards

**Dimercury dichloride**

Date Classified: Jun. 20, 2006 (Environmental Hazards: Mar. 31, 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, 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 (insoluble, ICSC (2000))  |
| 13 Oxidizing liquids  | Not applicable              | —      | —           | —                | Classified as "solid" according to GHS definition   |
| 14 Oxidizing solids   | Classification not possible | —      | —           | —                | Classification not possible due to lack of data, though being inorganic compounds containing chlorine |
| 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 3   | Skull and crossbones  | Danger   | Toxic if swallowed   | Based on the rat LD50 (oral route) value of 210mg/kg (RTECS (2005)).   |
| 1 Acute toxicity (dermal)  | Category 4   | Exclamation mark  | Warning  | Harmful in contact with skin   | Based on the rabbit LD50 (dermal route) value of 1,500mg/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: dust, mist)                            | Classification not possible  | —   | —  | —  | No data available  |
| 2 Skin corrosion / irritation  | Category 2   | Exclamation mark  | Warning  | Causes skin irritation   | Based on the description in ICSC (J) (2000): "flare and irritation of the eye/skin/respiratory tract." The substance is thus considered to cause skin irritation (though the severity of the effects is not presented) and classified into Category 2 from the viewpoint of safety.  |
| 3 Serious eye damage / eye irritation                                | Category 2A-2B   | Exclamation mark  | Warning  | Causes serious eye irritation  | Based on the description in ICSC (J) (2000): "flare and irritation of the eye/skin/respiratory tract." The substance is thus considered to cause eye irritation (though the severity of the effects is not presented) and classified into Category 2A-2B from the viewpoint of safety.   |
| 4 Respiratory/skin sensitization                                     | Respiratory sensitization: Classification not possible<br>Skin sensitization: Category 1 | (Respiratory sensitization) —<br>(Skin sensitization)<br>Exclamation mark | (Respiratory sensitization) —<br>(Skin sensitization)<br>Warning | (Respiratory sensitization) —<br>(Skin sensitization) May cause an allergic skin reaction            | Respiratory sensitization: No data available<br>Skin sensitization: Mercury is classified into a "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 mercurous chloride, seem to include mercury compounds. Mercurous chloride, which is a mercury compound, should thus cause skin sensitization.<br><br>* 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   | Classification not possible  | —   | —  | —  | No data available  |
| 6 Carcinogenicity  | Not classified   | —   | —  | —  | As for the mutagenicity/genotoxicity, refer to "ID285, Mercury Chloride (II), CAS: 7487-94-7."<br>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  | Classification not possible  | —   | —  | —  | No data available  |
| 8 Specific target organs/systemic toxicity following single exposure | Category 1 (kidneys)<br>Category 3 (respiratory tract irritation)                        | Health hazard and Exclamation mark  | Danger<br>Warning  | Causes damage to organs (kidneys)<br>(Respiratory tract irritation) May cause respiratory irritation | Based on the human evidence: "decreased urinary output and edema were observed; renal failure was regarded as a contributing factor of death." (CICAD 50 (2003)) and "eye/skin/respiratory irritation" (ICSC(J) (2000)).<br><br>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, nervous system, gastrointestinal tract) | Health hazard | Danger | Causes damage to organs through prolonged or repeated exposure (kidneys, nervous system, gastrointestinal tract) | Based on the human evidence including "abdominal pain, nausea, vomiting, black feces, decreased urinary output and renal failure; irritability, fretfulness, sleeplessness, weakness, photophobia, muscle twitching, hyperactive or hypoactive tendon reflexes, confusion, irregular arm movements, and impaired gait" (CICAD 50 (2003)), "dementia and irritability; reduced brain weight observed at necropsy; decreased cerebellar neurons; mercury granules in the cytoplasm found at the light microscopic level" (ATSDR (1994)). Since gastrointestinal tract effects were observed in the repeated dose toxicity studies using the dermal route of exposure, it is unlikely that these effects represented a direct toxic effect, so the GI tract was included in the target organ list. |
| 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 48 hours LC50=0.002mg/L of the crustacea (Daphnia magna) (AQUIRE, 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, there was bio-accumulation (BCF=1300 (Existing Chemical Safety Inspections Data)) and it was a metallic compound and the underwater action was unknown, it was classified into Category 1. |