# GHS Classification

**ID758** **2,2'-Iminodiethanol**

**CAS 111-42-2** 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 applicable | - | - | - | There are no chemical groups associated with explosive properties present in the molecules. |
| 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 | Not applicable | - | - | - | There are no chemical groups associated with explosive or self-reactive properties present in the molecule. |
| 9 | Pyrophoric liquids | Not applicable | - | - | - | Solid (GHS definition) |
| 10 | Pyrophoric solids | Not classified | - | - | - | Flash point: 280-662degC (Solvent Pocket Book, 1997; ICSC, 1994; NFPA,13th, 2002) |
| 11 | Self-heating substances and mixtures | Classification not possible | - | - | - | Test methods applicable to solid (melting point <= 140degC) substances are not available. |
| 12 | Substances and mixtures, which in contact with water, emit flammable gases | Not applicable | - | - | - | The chemical structure of the substance does not contain metals or metaloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At). |
| 13 | Oxidizing liquids | Not applicable | - | - | - | Solid (GHS definition) |
| 14 | Oxidizing solids | Not applicable | - | - | - | Organic compounds containing oxygen (but not chlorine and fluorine) and the oxygen is chemically bonded only to carbon and hydrogen (but not to other elements). |
| 15 | Organic peroxides | Not applicable | - | - | - | Organic compounds containing no -O-O- structure |
| 16 | Corrosive to metals | Classification not possible | - | - | - | No data 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 | It was set as Category 4 based on LD50= 1613mg/kg calculated by technological guidelines using 4 date of rat LD50 value (ACGIH (2001), PATTY (5th, 2001)). |
| 1 | Acute toxicity (dermal) | Not classified | - | - | - | Based on rabbit LD50 = 8810.5mg/kg calculated by technological guidelines using three data of rabbit LD50 values, it was set as the outside of Category. |
| 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 | - | - | - | The saturated vapor pressures concentrations pressure of this product is 0.37ppm. Mortality is not seen according to two rat acute toxicity tests (IUCLID (2000)) in saturated vapor pressure pressures concentrations. And LC50 level is not calculated, it cannot be classified. |
| 2 | Skin corrosion / irritation | Category 2 | Exclamation mark | Warning | Causes skin irritation | Though the stimulative grades vary from severe to slight, skin irritation is observed on rabbits (ACGIH (2001) and PATTY (5th, 2001)). Since there is a description of slight to moderate irritations on human (HSDB (2005)), and it is classified into R38 in EU, it was classified as Category 2. |
| 3 | Serious eye damage / eye irritation | Category 1 | Corrosion | Danger | Causes serious eye damage | Severe irritation is indicated by the rabbit (ACGIH (2001), PATTY (5th, 2001)). In humans, there is a statement that redness, a pain, severe burns and caustics are indicated (ICSC (J), (2002)), and it was classified into R41 in EU. So it was set as Category 1. |
| 4 | Respiratory/skin sensitization | Respiratory sensitization: Classification not possible; Skin sensitization: Not | (Respiratory sensitization)-; (Skin sensitization)- | (Respiratory sensitization)-; (Skin sensitization)- | (Respiratory sensitization)-; (Skin sensitization)- | Respiratory sensitization: No data<br>Skin sensitization : Based on facts that in two examinations (one of them based on the guideline 406 of OECD test) with guinea pigs sensitization was not identified ACGIH (2001), IUCLID (2000)) and that in the human patch test no sensitization was identified(IUCLID (2000)), it was put outside of Category. |
| 5 | Germ cell mutagenicity | Classification not possible | - | - | - | There were no in vivo mutagenicity test results and there were no positive findings for in vitro tests in multiple indices. Therefore we presupposed that we could not classify it. |
| 6 | Carcinogenicity | Not classified | - | - | - | Based on what is classified into 3 according to IARC (IARC (2000)), it carried out the outside of Category. |
| 7 | Toxic to reproduction | Classification not possible | - | - | - | Since although concrete reproductive toxicity is not observed in each animal studies, examination being clear of administration period are in organogenetic period administration, and there is no examination data in other administration period, it cannot be classified due to insufficient data. |

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| 8 | Specific target organs/systemic toxicity following single exposure | Category 1 (liver); Category 3 (narcotic effects) | Health hazard; Exclamation mark | Danger; Warning | Cause damage to organs (liver); May cause respiratory irritation or may cause drowsiness and dizziness (narcotic effects) | By oral administration test of rats, within the dose of guidance value of Category 1, an anesthetic actions (a sedative action, ataxia) and a liver damage (the increase in weight, the increase of serum transaminase and other liver enzyme, opacity swelling and vacuolar degeneration, damage of endoplasmic reticulum and mitochondria )was seen (ACGIH (2001)). So it is classified into Category 1 (liver) and Category 3 (anesthetic actions). |
| 9 | Specific target organs/systemic toxicity following repeated exposure | Category 2 (liver, kidneys, blood, central nervous system) | Health hazard | Warning | May cause damage to organs (liver, kidneys, blood, central nervous system) through prolonged or repeated exposure | Liver and kidney weights gain and nephropathy are observed in the dosage of guidance value within the limits of Category 2 to a rat (PATTY and (5th, 2001),ACGIH (2001)), the data of anemia, such as decrease of red count, hemoglobin concentration, and hematocrit value, and demyelinate in brain and spine are observed (ACGIH (2001)), and affecting liver and kidney is observed in humans (ICSC (J), (2002)). It was classified into Category 2 (liver, the kidney, blood, central nervous system) according to the above information. |
| 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 2 | – | – | Toxic to aquatic life | It was classified into Category 2 from 48-hour LC50=2150microg/L of Crustacea (Water flea) (AQUIRE, 2003). |
| 11 | Hazardous to the aquatic environment (chronic) | Not classified | – | – | – | Since rapidly degrading (the decomposition of TOC: 96.7% (Existing Chemicals Safety Check Data)), and supposed less bio-accumulative (log Kow=-1.43 (PHYSPROP Database, 2005)). |