

GHS Classification

ID889

1-Butanamine

CAS 109-73-9

Date Classified: Feb. 20, 2007 (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 | - | - | - | Liquid (GHS definition) |
| 3 Flammable aerosols | Not applicable | - | - | - | Not aerosol products |
| 4 Oxidizing gases | Not applicable | - | - | - | Liquid (GHS definition) |
| 5 Gases under pressure | Not applicable | - | - | - | Liquid (GHS definition) |
| 6 Flammable liquids | Category 2 | Flame | Danger | Highly flammable liquid and vapour | Flash point: <23degC, Initial boiling point: >35degC, UNRTDG Class: 3, PG II |
| 7 Flammable solids | Not applicable | - | - | - | Liquid (GHS definition) |
| 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 classified | - | - | - | Flash point: 310degC (Hommel, 1991 Card No.236) |
| 10 Pyrophoric solids | Not applicable | - | - | - | Liquid (GHS definition) |
| 11 Self-heating substances and mixtures | Not classified | - | - | - | UNRTDG Class: 3, Subsidiary risks Class: 8 |
| 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 metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At). |
| 13 Oxidizing liquids | Not applicable | - | - | - | Organic compounds containing no oxygen, fluorine and chlorine. |
| 14 Oxidizing solids | Not applicable | - | - | - | Liquid (GHS definition) |
| 15 Organic peroxides | Not applicable | - | - | - | Containing no -O-O- structure |
| 16 Corrosive to metals | Classification not possible | - | - | - | Although it is classified into the subsidiary risks class 8 in UNRTDG, the distinguish with skin corrosivity cannot be performed. |

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 | LD50 = 200mg/kg obtained from statistically calculated based on rat oral LD50 values: 5000mg/kg, 200 – 400 mg/kg (PATTY, 1994), 366mg/kg (Recommendation of Sanei Academy, 1994) and 371mg (PATTY, (1994) ACGIH (7th, 2001)). The value was classified to category 3. |
| 1 Acute toxicity (dermal) | Category 3 | Skull and crossbones | Danger | Toxic in contact with skin | Since rabbit percutaneous LD50:850mg/kg (Japan Society for Occupational Health recommendation, 1994), it was set as Category 3. |
| 1 Acute toxicity (inhalation: gas) | Not applicable | - | - | - | Liquid (GHS definition) |
| 1 Acute toxicity (inhalation: vapour) | Classification not possible | - | - | - | In acute inhalation exposure test on rats, all rats died within 5 minutes with 4000ppm exposure (which is significantly lower than the saturated vapor concentration of this substance at 121600 ppm), however, there is no mortality till 4 hours with 2000ppm exposure (Industrial Hygiene Society advice (1994)). Therefore, it is judged that LC50 (4 hours) value is between 2000ppm and 4000ppm. But it was not able to decide that it is Category 3 or 4 only from these information, it cannot be classified. |
| 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 | Since it is judged that there is caustic from description that the necrosis of the skin arose to the guinea pigs (Occupational Health Recommendation of Occupational Exposure Limits (1994)), and it is judged with "corrosive" in EU, it was set as Category 1A-1C. Time of exposure was unknown, so subdivision was not carried out. |
| 3 Serious eye damage / eye irritation | Category 1 | Corrosion | Danger | Causes serious eye damage | Since Japan Society for Occupational Health Recommendation of Occupational Exposure Limits (1994) and PATTY (4th, 1994) had descriptions which shows that it may cause the critical lesion in the eyes of the rabbits, we classified it as Category 1. |
| 4 Respiratory/skin sensitization | respiratory sensitization: Classification not possible; Skin sensitization: Not possible | (Respiratory sensitization)-; (Skin sensitization)- | (Respiratory sensitization)-; (Skin sensitization)- | (Respiratory sensitization)-; (Skin sensitization)- | Respiratory organ: No data. Skin: Based on the description that it is negative in the skin sensitivity study with the Maximization method in the guinea pig in IUCLID (2000), we clasified it as Out Of Category. |
| 5 Germ cell mutagenicity | Classification not possible | - | - | - | Since there is only data from in vitro mutagenicity test using the bacterial cells, it is cannot be classified due to data insufficiency. |
| 6 Carcinogenicity | Classification not possible | - | - | - | Classification not possible due to lack of data |

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| 7 | Toxic to reproduction | Classification not possible | - | - | - | Classification not possible due to lack of data |
| 8 | Specific target organs/systemic toxicity following single exposure | Category 1 (respiratory organs) | Health hazard | Danger | Cause damage to organs (respiratory organs) | The fundamental action of high-concentration butylamine stated in Society for Occupational Health Recommendation of Occupational Exposure (1994) intensifies vulnerability to the skin and an eye, and in severe cases, it was judged that there were the respiratory-organs stimulativeness and lung obstacle which result in pulmonary edemas. So it was set as Category 1 (respiratory tracts). |
| 9 | Specific target organs/systemic toxicity following repeated exposure | Category 1 (respiratory organs) | Health hazard | Danger | Causes damage to organs (respiratory organs) through prolonged or repeated exposure | Based on the description that the bronchitis accompanied by symptom, such as mucous secretions and shortness of breath is occurred at repeated inhalation exposures (HSFS (1998)), it was classified into Category 1 (respiratory systems). |
| 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 3 | - | - | Harmful to aquatic life | It was classified into Category 3 from 96-hour LC50=24000microg/L of fishes (grunion) (AQUIRE, 2003). |
| 11 Hazardous to the aquatic environment (chronic) | Not classified | - | - | - | Since rapidly degrading (BOD: 85% (existing chemical safety inspections data)), and less bio-accumulative (log Kow=0.97 (PHYSPROP Database, 2005)). |