

GHS Classification

ID318

CAS 556-61-6

Physical Hazards

Methyl isothiocyanate

Date Classified: Nov. 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 | Classification not possible | — | — | — | No data available |
| 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 | Classification not possible | — | — | — | No data available |
| 11 Self-heating substances and mixtures | Classification not possible | — | — | — | Test methods applicable to liquid substances are not available (melting point: 35-36degC, Merck (13th, 2001), test temperature: 140degC). |
| 12 Substances and mixtures, which in contact with water, emit flammable gases | Not applicable | — | — | — | Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At) |
| 13 Oxidizing liquids | Not applicable | — | — | — | Classified as "solid" according to GHS definition |
| 14 Oxidizing solids | Not applicable | — | — | — | Organic compounds containing no oxygen, fluorine or chlorine |
| 15 Organic peroxides | Not applicable | — | — | — | Organic compounds containing no "O-O-" structure |
| 16 Corrosive to metals | Classification not possible | — | — | — | No data available on substances with melting point of <55degC (melting point: 35-36degC, Merck (13th, 2001)). |

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 72mg/kg representing the lower of the two testing data, 72mg/kg (RTECS (2006)) and 175mg/kg (HSDB (2006)). |
| 1 Acute toxicity (dermal) | Category 1 | Skull and crossbones | Danger | Fatal in contact with skin | Based on the rabbit LD50 (dermal route) value of 33mg/kg (RTECS (2006)). |
| 1 Acute toxicity (inhalation: gas) | Not applicable | — | — | — | Due to the fact that the substance is a solid according to the GHS definition and inhalation of its gas is not expected. |
| 1 Acute toxicity (inhalation: aerosol) | Classification not possible | — | — | — | No data available |
| 1 Acute toxicity (inhalation: dust, mist) | Category 2 | Skull and crossbones | Danger | Fatal if inhaled | Based on the rat LC50 (inhalation of dust) value of 0.48mg/L (4 hours) (HSDB (2006)). |
| 2 Skin corrosion / irritation | Category 2 | Exclamation mark | Warning | Causes skin irritation | Based on the descriptions in the reports on rabbit skin irritation tests: "Moderate" (though the results are those of 24 (not 4) hour application) (RTECS (2006)) and "strongly irritating" (exposure duration unknown) (HSDB (2006)). The substance is thus considered a moderate skin irritant. |
| 3 Serious eye damage / eye irritation | Category 2A | Exclamation mark | Warning | Causes serious eye irritation | Based on the descriptions in the reports on rabbit eye irritation tests: "Strongly irritating" (HSDB (2006)) and "severe" (RTECS (2006)). The substance is thus considered a strong eye irritant. |
| 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: Insufficient data available Skin sensitization: Insufficient data available |
| 5 Germ cell mutagenicity | Classification not possible | — | — | — | Classification not possible due to the insufficiency of data (no data available on in vivo mutagenicity/genotoxicity tests) |
| 6 Carcinogenicity | Classification not possible | — | — | — | No data available |
| 7 Toxic to reproduction | Classification not possible | — | — | — | Classification not possible due to the insufficiency of data. |
| 8 Specific target organs/systemic toxicity following single exposure | Category 2 (central nervous system), Category 3 (respiratory tract irritation) | Health hazard | Warning | May cause damage to organs (central nervous system) (Respiratory irritation) May cause respiratory irritation | Based on the human evidence including "convulsions or effects on the convulsion threshold, changed locomotor activity and coma" (RTECS 2006). "Over 240 individuals reported symptoms such as eye and throat irritation, dizziness, and shortness of breath" (HSDB (2003)). As the referenced databases are assigned a priority rating of 2, these effects are classified into Category 2 (central nervous system) and Category 3 (respiratory irritation). |
| 9 Specific target organs/systemic toxicity following repeated exposure | Category 2 (salivary gland, respiratory organs, nervous system) | Health hazard | Warning | May cause damage to organs through prolonged or repeated exposure (salivary gland, respiratory organs, nervous system) | Based on the evidence from animal studies including "somnolency (reduced systemic activity), structural and functional changes in the salivary gland," "structural and functional changes in the trachea or bronchi" (RTECS (2006)). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Categories 1 and 2. However, since the referenced databases are assigned a priority rating of 2, these effects are classified into Category 2 (salivary gland, respiratory organs, nervous system). |
| 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 EC50=0.055mg/L of the crustacea (Daphnia magna) (Agricultural Chemical Registration Data, 2004). |
| 11 Hazardous to the aquatic environment (chronic) | Category 1 | Environment | Warning | Very toxic to aquatic life with long lasting effects | Although acute toxicity is Category 1 and bio-accumulation is low (log Kow=0.94(PHYSROP Database, 2005)), since there was no rapidly degrading (the decomposition by BOD: 0%(Existing Chemical Safety Inspections Data)), it was classified into Category 1. |