

GHS Classification

ID52

Picric acid

CAS 88-89-1

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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 | Division 1.1 | Bomb explosion | Danger | Explosive; massexplosion hazard | Based on the classification by the UN Recommendations on the Transport of Dangerous Goods (Division 1.1D, UN#0154) (no other data available). The substance contains nitro groups, with its oxygen budget calculated at -45. Its kick-off temperature and decomposition energy stand at 118degC and 5.1kJ/g, respectively, according to the Explosion Safety Database (2005) - i.e., explosives. |
| 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 | - | - | - | Classified into Division 1.1D (UN#0154) (UN Recommendations on the Transport of Dangerous Goods) |
| 8 Self-reactive substances and mixtures | Not classified | - | - | - | Classified as "explosives" |
| 9 Pyrophoric liquids | Not applicable | - | - | - | Classified as "solid" according to GHS definition |
| 10 Pyrophoric solids | Not classified | - | - | - | Not pyrophoric when in contact with air at ordinary temperatures; the auto-ignition temperature is 300degC (ICSC, 1999) |
| 11 Self-heating substances and mixtures | Classification not possible | - | - | - | Test methods applicable to liquid substances are not available - melting point: 122degC (ICSC, 1999), 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 classified | - | - | - | No data available, though being organic compounds containing oxygen bound to carbon and hydrogen. Not classified, based on the classification by UN Recommendations on the Transport of Dangerous Goods (Division 1.1D, UN#0154) |
| 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 3 | Skull and crossbones | Danger | Toxic if swallowed | Based on the LD50 value of 214 mg/kg calculated from the testing data of rat LD50 (oral route) of 492mg/kg (Report by the Ministry of Health, Labour and Welfare (2001)), 283 mg/kg (Report by the Ministry of Health, Labour and Welfare (2001)), 200mg/kg (DFGOT vol. 17 (2002)) and 290mg/kg (DFGOT vol. 17 (2002)). |
| 1 Acute toxicity (dermal) | Classification not possible | - | - | - | No data available |
| 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: mist) | Classification not possible | - | - | - | No data available |
| 2 Skin corrosion / irritation | Classification not possible | - | - | - | Insufficient data available |
| 3 Serious eye damage / eye irritation | Category 2B | - | Warning | Causes eye irritation | Based on the results of rabbit eye irritation tests (ACGIH 7th (2001), DFGOT vol.17 (2002)): The irritation subsides within 24 hours. |
| 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: based on the results of guinea pig skin sensitization tests (CERi Hazard Data 98-30 (1999), DFGOT vol.17 (2002)) (skin sensitization: positive) and those of human skin sensitization tests (CERi Hazard Data 98-30 (1999), ACGIH (7th, 2001), DFGOT Vol.17 (2002)) (skin sensitization: positive). |
| 5 Germ cell mutagenicity | Classification not possible | - | - | - | Insufficient data available |
| 6 Carcinogenicity | Classification not possible | - | - | - | No data available |
| 7 Toxic to reproduction | Classification not possible | - | - | - | No data available |
| 8 Specific target organs/systemic toxicity following single exposure | Category 1 (central nervous system, blood system, kidneys, liver) Category 3 (respiratory tract irritation) | Health hazard and Exclamation mark | Danger Warning | Causes damage to organs (central nervous system, blood system, kidneys, liver) (Respiratory tract irritation) May cause respiratory irritation | Based on the human evidence including "headache, dizziness, dark urine and albuminuria, and if ingested in large quantities, destruction of red blood cells, gastroenteritis, hemorrhagic nephritis, acute hepatitis" (CERi Hazard Data 98-30 (1999)), "irritation to the eye and nasal mucosal" (MOE Risk Assessment vol. 3 (2004)), and the evidence from animal studies including "tremor, tonic/clonic spasm" (CERi Hazard Data 98-30 (1999)), "a decrease in locomotor activity, gait abnormality, clonic spasm, chromaturia (dark yellow), coloring of skin (yellow), abdominal position procumbent, decubitus position" (2001 Report by the Ministry of Health, Labour and Welfare). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 1. |

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|----|--|--|---------------|-------------------|---|--|
| 9 | Specific target organs/systemic toxicity following repeated exposure | Category 1 (blood system) Category 2 (testes) | Health hazard | Danger Warning | Causes damage to organs through prolonged or repeated exposure (blood system) May cause damage to organs through prolonged or repeated exposure (testes) | Based on the evidence from animal studies including "anemia due probably to hemolysis and seminiferous tubular atrophy" (2001 Report by the Ministry of Health, Labour and Welfare). The effects on experimental animals were observed at dosing levels within the guidance value ranges for Category 2. |
| 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 hours LC50=19.7mg/L of the crustacea (Mysid Shrimp)) (CERI Hazard Data, 1999). |
| 11 Hazardous to the aquatic environment (chronic) | Not classified | - | - | - | Although the acute toxicity was Category 3, judging from the NOEC=5mg/L during 21 days of the crustacea (Daphnia magna) (ECETOC TR91, 2003), it was classified into Not classified. |