

GHS Classification

ID882

4-Nitrotoluene

CAS 99-99-0

Date Classified: Jun. 20, 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 classified | - | - | - | UNRTDG Class: 6.1 |
| 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 | - | - | - | Although there is information of flash point and ignition point (ICSC (J) (2000) and others), there is no data with defined test method. |
| 8 Self-reactive substances and mixtures | Not classified | - | - | - | Classified in UNRTDG Class: 6.1 |
| 9 Pyrophoric liquids | Not applicable | - | - | - | Solid (GHS definition) |
| 10 Pyrophoric solids | Not classified | - | - | - | Flash point: 450degC (ICSC (J), 2000) |
| 11 Self-heating substances and mixtures | Classification not possible | - | - | - | Test methods applicable to liquid substances at 140degC 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 metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At). |
| 13 Oxidizing liquids | Not applicable | - | - | - | Solid (GHS definition) |
| 14 Oxidizing solids | Not classified | - | - | - | UNRTDG Class: 6.1 |
| 15 Organic peroxides | Not applicable | - | - | - | Containing no -O-O- structure |
| 16 Corrosive to metals | Not classified | - | - | - | UNRTDG Class: 6.1 |

Health Hazards

| Hazard class | Classification | symbol | signal word | hazard statement | Rational for the classification |
|---|--|--------|-------------|-----------------------------|---|
| 1 Acute toxicity (oral) | Category 5 | - | Warning | May be harmful if swallowed | Calculated based on rat LD50 value: 1960mg/kg, 7100mg/kg (CERI Hazard Data, 2000), 3200mg/kg (SIDS, 2002, IARC 65, 1996), 2144mg/kg (SIDS, 2002, IARC 65, 1996, NTP TR 498, 2002) and >2250mg/kg (SIDS, 2005). Since the calculated values was 2014mg/kg, it was classified to category 5. |
| 1 Acute toxicity (dermal) | Not classified | - | - | - | It was set as the outside of Category from the description that death was not observed in both exposure for 24 hours of 20000mg/kg using a rabbit and exposure for 6 hours of 16000mg/kg using rat (SIDS (2005)). |
| 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 | - | - | - | There is the description that rat LC50 (1 hour) value: >758ppm (4-hour corresponding values 1.06mg/L (CERI Hazard Data (2000)), and that death was not acknowledged in the test which used rats by 1-hour exposure of 4.167mg/L (4-hour corresponding values 1.042mg/L) and 4-hour exposure of 152ppm (corresponding values 0.851mg/L) (SIDS (2005)). But the category could not be specified from these data. Therefore, it cannot be classified since data is insufficient. |
| 2 Skin corrosion / irritation | Not classified | - | - | - | In the test applied to the skin of the rabbit on SIDS (2005), from description that irritation was not acknowledged by zero of Draize score, it was carried out the outside of Category. |
| 3 Serious eye damage / eye irritation | Not classified | - | - | - | There is the description that in the test applied to the eye of the rabbit, effect was not acknowledged in corneal and iris (SIDS (2005)). And Draize score was between 1 and 2. As judging that it is not applicable to the acceptance criteria of irritation, it was set as the outside of Category. |
| 4 Respiratory/skin sensitization | Respiratory sensitization: Classification not possible; Skin sensitization: Not classified | - | - | - | Respiratory organ: No data. Skin: We classified it as Out Of Category based on the description of SIDS (2005) that in single injection adjuvant test and Buehler test using the guinea pigs sensitizing property was not acknowledged. |
| 5 Germ cell mutagenicity | Not classified | - | - | - | Since there was a negative result with the micronucleus test on rat and mouse red corpuscles which is an in vivo mutagenicity test using somatic cells (SIDS, 2005, NTP DB, 2005), it was classified as out of Category. |
| 6 Carcinogenicity | Not classified | - | - | - | Since it was classified into the group 3 (IARC 65, 1996) in IARC, it was considered as the outside of Category. |

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|----|--|--|---------------|---------|---|---|
| 7 | Toxic to reproduction | Not classified | - | - | - | There is a description that effect on fertility was not observed in the rat oral administration reproduction study at the dose causing systemic toxicity (SIDS (2005)). Moreover, there is a description that although testicular atrophy with necrosis fubulus semiferus contortus was observed but no effect on fertility and fetus were observed in rat oral administration reproductive test (CERI hazard data collection (2000), IARC 65 (1996) and SIDS (2005)). As mentioned above, it is classified out of Category. |
| 8 | Specific target organs/systemic toxicity following single exposure | Category 1 (blood system) | Health hazard | Danger | Cause damage to organs (blood system) | From description in CERI Hazard Data (2000) that methemoglobinemia occurs as acute effects on humans, it was set as Category 1 (blood). |
| 9 | Specific target organs/systemic toxicity following repeated exposure | Category 2 (blood, liver, immune system) | Health hazard | Warning | May cause damage to organs (blood, liver, immune system) through prolonged or repeated exposure | Based on the description that in the feeding oral administration tests using the rat, the change which suggests the effects on the blood was observed with the dosage in the Category 2 guidance value range (SIDS (2005) and NTP TR 498 (2002)), and the description that in the immunotoxicity study at the 14-days oral administration using the mouse, swelling of hepatocytes and immune dysfunctions were observed with the dosage in the Category 2 guidance value range (CERI Hazard Data (2000), ACGIH (7th, 2001), IARC 65 (1996), SIDS (2005), NTP TR 498 (2002) and NTP DB (2005)), it was classified into Category 2 (blood, liver, immune 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 2 | - | - | Toxic to aquatic life | It was classified into Category 2 from 48-hour EC50=4.3mg/L of Crustacea(Daphnia magna) (MOE eco-toxicity tests of chemicals, 1998). |
| 11 Hazardous to the aquatic environment (chronic) | Category 2 | Environment | - | Toxic to aquatic life with long lasting effects | Classified into Category 2, since acute toxicity was Category 2 and not rapidly degrading (BOD: 0.8% (existing chemical safety inspections data)), though less bio-accumulative (BCF=8 (existing chemical safety inspections data)). |