

GHS Classification

ID416

CAS 618-85-9

Physical Hazards

3,5-Dinitrotoluene

Date Classified: Aug. 22, 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 classified	—	—	—	Because of a lack of data on the kick-off temperature and decomposition energy (though the substance contains nitro groups, with its oxygen budget calculated at -114). Classified into Division 6.1 (UN#3454 Dinitrotoluene (solid) and UN#1600 Dinitrotoluene (molten)) (UN Recommendations on the Transport of Dangerous Goods).
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	—	—	—	Classification not possible due to lack of data, though classified as flammable according to HSDB (2006). Classified into Division 6.1 (UN#3454 Dinitrotoluene (solid) and UN#1600 Dinitrotoluene (molten)) (UN Recommendations on the Transport of Dangerous Goods).
8 Self-reactive substances and mixtures	Not classified	—	—	—	No data available, though the substance contains nitro groups with explosive properties. Classified into Division 6.1 (UN#3454 Dinitrotoluene (solid) and 1600 Dinitrotoluene (molten)) (UN Recommendations on the Transport of Dangerous Goods).
9 Pyrophoric liquids	Not applicable	—	—	—	Classified as "solid" according to GHS definition
10 Pyrophoric solids	Not classified	—	—	—	Classified into Division 6.1 (UN#3454 Dinitrotoluene (solid) and 1600 Dinitrotoluene (molten)) (UN Recommendations on the Transport of Dangerous Goods).
11 Self-heating substances and mixtures	Classification not possible	—	—	—	Test methods applicable to liquid substances are not available (melting point: 93degC (HSDB, 2006), 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 elements other than carbon and hydrogen. Classified into Division 6.1 (UN#3454 Dinitrotoluene (solid) and 1600 Dinitrotoluene (molten)) (UN Recommendations on the Transport of Dangerous Goods).
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 rat LD50 (oral route) value of 216mg/kg representing the lower of the two testing data, 216mg/kg and 309mg/kg (DFGOT vol.6 (1994)).
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: dust, mist)	Classification not possible	—	—	—	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	—	—	—	No data available
2 Skin corrosion / irritation	Classification not possible	—	—	—	No data available. As for the health hazards, refer to "ID413, Dinitrotoluene, CAS: 25321-14-6."
3 Serious eye damage / eye irritation	Classification not possible	—	—	—	No data available As for the health hazards, refer to "ID413, Dinitrotoluene, CAS: 25321-14-6."
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: No data available Skin sensitization: Insufficient data available
5 Germ cell mutagenicity	Not classified	—	—	—	Based on negative data on multi-generation mutagenicity tests (dominant lethal tests) and the absence of data on germ/somatic cell mutagenicity tests in vivo, described in DFGOT vol.6 (1994), NITE Initial Risk Assessment No.51 (2005), IARC 65 (1996) and CER- NITE Hazard Assessment
6 Carcinogenicity	Not classified	—	—	—	Due to the fact that the substance is classified as Group 3 by IARC (1996).
7 Toxic to reproduction	Classification not possible	—	—	—	No data available As for the health hazards, refer to "ID413, Dinitrotoluene, CAS: 25321-14-6."
8 Specific target organs/systemic toxicity following single exposure	Category 3 (narcotic effects)	Exclamation mark	Warning	(Narcotic effects) May cause drowsiness or dizziness	Based on the evidence from animal studies including "somnolency" (RTECS 1999). Refer to "Dinitrotoluene (CAS,25321-14-6)."
9 Specific target organs/systemic toxicity following repeated exposure	Classification not possible	—	—	—	Classification not possible due to lack of data on 3,5-dinitrotoluene per se. Refer to "Dinitrotoluene (CAS,25321-14-6)."
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=22.0mg/L of the fish (Fathead Minnows) (CERI/NITE Hazard Assessment Report, 2004).
11 Hazardous to the aquatic environment (chronic)	Category 3	-	-	Harmful to aquatic life with long lasting effects	Although acute toxicity was Category 3 and the bio-accumulation potential was low (log Kow=2.18(PHYSROP Database, 2005)), since there was no rapidly degrading (the decomposition by BOD: 0%(CERI/NITE Hazard Assessment Report, 2004)), it was classified into Category 3.