

GHS Classification

ID210

CAS 91-08-7

Physical Hazards

2-Methyl-1,3-phenylene diisocyanate

Date Classified: Mar. 23, 2006 (Environmental Hazards: Feb. 10, 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 "liquid" according to GHS definition
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
5 Gases under pressure	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
6 Flammable liquids	Not classified	-	-	-	The flash point is 127degC (c.c.) (ICSC, 2004)
7 Flammable solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
8 Self-reactive substances and mixtures	Not applicable	-	-	-	Containing no chemical groups with explosive or self-reactive properties
9 Pyrophoric liquids	Not classified	-	-	-	Not pyrophoric when in contact with air at ordinary temperatures; the auto-ignition temperature is 620degC (ICSC, 2004)
10 Pyrophoric solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
11 Self-heating substances and mixtures	Classification not possible	-	-	-	Test methods applicable to liquid substances are not available
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	-	-	-	Organic compounds containing oxygen (but not fluorine and chlorine), with the oxygen bound to carbon and hydrogen (but not to other elements)
14 Oxidizing solids	Not applicable	-	-	-	Classified as "liquid" according to GHS definition
15 Organic peroxides	Not applicable	-	-	-	Organic compounds containing no "-O-O-" structure
16 Corrosive to metals	Not classified	-	-	-	Classified into Division 6.1 (UN#2078) (UN Recommendations on the Transport of Dangerous Goods)

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Classification not possible	-	-	-	No data available
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 "liquid" 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	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the description in HSDB (2005): "Inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns, or death; Reaction with water or moist air will release toxic, corrosive or flammable gases; Reaction with water may generate much heat, which will increase the concentration of fumes in the air; Fire will produce irritating, corrosive and/or toxic gases; Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution," and in ICSC (J) (1998): Short-term exposure to the substance causes "redness, burning sensation and pain," with reference to EU Risk Phrase (Category Xi: Irritating).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	Based on the description in the report on human eye irritation (DFGOT vol.20 (2005)): Irritation of the eyes and nose more severe than with 2,4-TDI. The substance is considered "severely irritating" to the eyes. Classified into Category Xi (Irritating) by EU Risk Phrase.
4 Respiratory/skin sensitization	Respiratory sensitization: Category 1 Skin sensitization: Category 1	(Respiratory sensitization) Health hazard (Skin sensitization) Exclamation mark	(Respiratory sensitization) Danger (Skin sensitization) Warning	(Respiratory sensitization) May cause allergic or asthmatic symptoms or breathing difficulties if inhaled (Skin sensitization) May cause allergic skin reaction	Respiratory sensitization: based on the classification by the Japan Society for Occupational Health (2005) (Respiratory Tract, Group 1). Skin sensitization: based on the classification by the Japan Society for Occupational Health (2005) (Skin, Group 2) and ACGIH-TLV (2005) (SEN).
5 Germ cell mutagenicity	Category 2	Health hazard	Warning	Suspected of causing genetic defects	Data on tests in vivo are not available, while some of the results of mutagenicity tests in vitro (reverse mutation tests, chromosome aberration tests) show positive. No description is available for data on mutagenicity tests in vivo showing negative. Classification is based on GHS definition.
6 Carcinogenicity	Category 2	Health hazard	Warning	Suspected of causing cancer	Due to the fact that the substance is classified as Category A4 by ACGIH (2001), Group 2B by IARC 71 (1999) and Category 2B according to Recommendations by the Japan Society of Occupational Health (2004), and priority was given to the IARC classification, following the guidelines.
7 Toxic to reproduction	Classification not possible	-	-	-	No data available

8	Specific target organs/systemic toxicity following single exposure	Category 2 (respiratory organs)	Health hazard	Warning	May cause damage to organs (respiratory organs)	Based on the human evidence including: eye/skin/respiratory irritation; chemical bronchitis, pneumonia, pulmonary edema (associated with inhalation of the vapour) (IGSC (J) 1995).
9	Specific target organs/systemic toxicity following repeated exposure	Classification not possible	-	-	-	No data available
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)	Not classified	-	-	-	It was classified into Not classified from 96 hours LC50=164mg/L of the fish (Fathead minnows) (HSDB (2004)). In addition, methyl-1,3-phenylene diisocyanate (isomer mixture of this substance) was classified into Category 1.
11 Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since acute toxicity was classified into Not classified (acute toxicity is not reported within the aqueous solubility concentrations) and the bio-accumulation was low (log Kow=3.74 (PHYSPROP Database (2005))), it was classified into Not classified. In addition, the chronic toxicity of methyl-1,3-phenylene diisocyanate (isomer mixture of this substance) was classified into Category 1.