



Substance name: 2,4 - Dinitrotoluene

EC number: 204-450-0

CAS number: 121-14-2

**MEMBER STATE COMMITTEE
SUPPORT DOCUMENT FOR IDENTIFICATION OF**

2,4 - DINITROTOLUENE

**AS A SUBSTANCE OF VERY HIGH CONCERN BECAUSE OF ITS
CMR PROPERTIES**

Adopted on 27 November 2009

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ABBREVIATIONS

ATP	Adaptation to Technical Progress
CAS	Chemical Abstract Services
CMR	Carcinogenic, Mutagenic and toxic to Reproduction
DNT	Dinitrotoluene
EASE	Estimation and Assessment of Substance Exposure Physico-chemical properties [Model]
EC	European Communities
ECB	European Chemicals Bureau
EEC	European Economic Communities
EU	European Union
EUSES	European Union System for the Evaluation of Substances [software tool in support of the Technical Guidance Document on risk assessment]
IUPAC	International Union for Pure and Applied Chemistry
RAR	Risk Assessment Report
RRS	Risk Reduction Strategy
SPIN	Substances in Preparations in Nordic Countries [Database]
TDA	Toluene-2,4-diamine (4-methyl-m-phenylenediamine)
TDI	Toluene-2,4-diisocyanate (4-methyl-m-phenylenediisocyanate)
vPvB	very Persistent and very Bioaccumulative

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- *The substance is identified as a CMR according to Article 57 (a) of Regulation (EC) No 1907/2006 (REACH).*

Summary of how the substance meets the CMR (Cat 1 or 2), PBT or vPvB criteria, or is considered to be a substance of an equivalent level of concern

2,4-Dinitrotoluene is listed as carcinogen Category 2¹; R45 (May cause cancer) in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) 1272/2008 and its amendment for the purposes of its adaptation to technical and scientific progress by Regulation (EC) 790/2009 (Index Number: 609-007-00-9).

Therefore, this classification of the substance in Regulation (EC) No 1272/2008 shows that the substance meets the criteria for classification as carcinogen in accordance with Article 57 (a) of REACH².

Registration number(s) of the substance or of substances containing the substance:

Not relevant

¹ This corresponds to a classification as carcinogen 1B, H350 in Annex VI, part 3, Table 3.1 of Regulation (EC) No 1272/2008 (list of harmonised classification and labelling of hazardous substances) amended by Regulation (EC) 790/2009.

² The substance is also referred to in the 1st adaptation to technical and scientific progress Commission Regulation (EC) No 790/2009 of 10 August 2009 amending Regulation (EC) No 1272/2008, which does not change the classification of the substance as carcinogen.

JUSTIFICATION

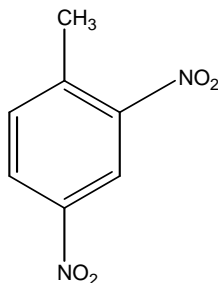
1 IDENTITY OF THE SUBSTANCE AND PHYSICAL AND CHEMICAL PROPERTIES

1.1 Name and other identifiers of the substance

Chemical Name: 2,4-Dinitrotoluene
EC Number: 204-450-0
CAS Number: 121-14-2
IUPAC Name: 1-methyl-2,4-dinitrobenzene

1.2 Composition of the substance

Chemical Name: 2,4-Dinitrotoluene
EC Number: 204-450-0
CAS Number: 121-14-2
IUPAC Name: 1-methyl-2,4-dinitrobenzene
Molecular Formula: $C_7H_6N_2O_4$
Structural Formula:



Molecular Weight: 182.14
Typical proportion % $\geq 99\%$
Impurity: There are no data available
Real proportion (range) in %

1.3 Physico-chemical properties

Table 1: Summary of physico-chemical properties

REACH ref Annex, §	Property	Value	Reference
VII, 7.1	Physical state at 20 C and 101.3 kPa	Solid	EU RAR (2008)
VII, 7.2	Melting / freezing point	69.9°C	EU RAR (2008)
VII, 7.3	Boiling point	319.5°C	EU RAR (2008)
VII, 7.5	Vapour pressure	$7.9 \cdot 10^{-3}$ Pa at 20°C	EU RAR (2008)
VII, 7.7	Water solubility	166 mg/l at room temperature	EU RAR (2008)
VII, 7.8	Partition coefficient n-octanol/water (log value)	1.98	EU RAR (2008)
IX, 7.16	Dissociation constant	Not available	

2 CLASSIFICATION AND LABELLING

2.1 Classification in Annex VI of Regulation (EC) No 1272/2008

2,4-Dinitrotoluene is classified as follows (with Index Number: 609-007-00-9) according to part 3 of Annex VI, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) No 1272/2008, amended for the purposes of its adaptation to technical and scientific progress by Regulation (EC) No 790/2009:

Carc.Cat. 2; R45: May cause cancer

Muta. Cat. 3; R68: Possible risk of irreversible effects.

Repr. Cat. 3; R62: Possible risk of impaired fertility

T; R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.

Xn; R48/22: Harmful, danger of serious damage to health by prolonged exposure if swallowed.

N; R50-53: Dangerous for the environment. Very toxic to aquatic organisms/May cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S53: Avoid exposure - obtain special instructions before use

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

S60: This material and its container must be disposed of as hazardous waste

S61: Avoid release to the environment. Refer to special instructions/Safety data sheets

Its harmonised classification and labelling as a hazardous substance according to Regulation (EC) No 1272/2008 (Annex VI, part 3, Table 3.1) amended by Regulation (EC) No 790/2009 is as follows (Index Number: 609-007-00-9):

Carc. 1B; H350

Muta. 2; H341

Repr. 2; H361f ***

Acute Tox. 3 *; H331

Acute Tox. 3 *; H311

Acute Tox. 3 *; H301

STOT RE 2 *; H373 **

Aquatic Acute 1; H400

Aquatic Chronic 1; H410

The change of classification in the first ATP of CLP Regulation only involves the classification for the environment.

3 ENVIRONMENTAL FATE PROPERTIES

Not relevant for this type of dossier

4 HUMAN HEALTH HAZARD ASSESSMENT

Not relevant for this type of dossier

5 ENVIRONMENTAL HAZARD ASSESSMENT

Not relevant for this type of dossier.

6 PBT, VPVB AND EQUIVALENT LEVEL OF CONCERN ASSESSMENT

Not relevant for this type of dossier

REFERENCES

EU RAR, 2008: European Union Risk Assessment Report, 2,4-Dinitrotoluene. CAS No: 121-14-2. EINECS No: 204-450-0.

OJ 2008/L141/20 Commission Recommendation on risk reduction measures for the substance 2,4-dinitrotoluene. CAS No: 121-14-2. EINECS No: 204-450-0.