# SAFETY DATA SHEET (SDS)

in accordance with Regulation (EC) No 1907/2006 (REACH), Annex II — Regulation (EU) 2020/878

Date: 04.11.2026 | Version: 10 | EN

## 4-Methyl-2-nitroaniline

*4-methyl-2-nitroaniline*

**CAS 89-62-3**

$C_7H_8N_2O_2$ | EC 201-924-9

| MOLAR MASS | LOGP |
|---|---|
| 152.15 | 2 |

## HAZARD CLASSIFICATION (GHS / CLP)



**Danger**

H301 | H311 | H331 | H373 | H411

*Non-harmonised classification (no entry in Annex VI to CLP) — assigned from aggregated ECHA C&L notifications; the H-statements require verification against the official source (ECHA C&L / manufacturer's data sheet).*

## 1. Identification of the substance/mixture and of the company/undertaking

| | |
|---|---|
| **1.1 Substance name** | 4-Methyl-2-nitroaniline |
| **1.1 IUPAC name** | 4-methyl-2-nitroaniline |
| **1.1 CAS number** | 89-62-3 |
| **1.1 EC number** | 201-924-9 |
| **1.1 PubChem CID** | 6978 |
| **1.1 InChIKey** | DLURHXYXQYMPLT-UHFFFAOYSA-N |
| **1.1 SMILES** | CC1=CC(=C(C=C1)N)[N+](=O)[O-] |
| **1.1 Molecular formula** | $C_7H_8N_2O_2$ [7] |
| **1.1 Molar mass** | 152.15 g/mol [7] |
| **1.1 Exact mass** | 152.0586 Da [7] |

### 1.2 Uses

For laboratory and research purposes. Not for use in the production of food, medicines or cosmetics without appropriate authorisation.

### 1.3 Details of the supplier

| | |
|---|---|
| REFERENCE COPY — NO SUPPLIER DETAILS — NOT FOR DISTRIBUTION | Supplier details are not included in this reference copy. The supplier placing the substance on the market must complete this section and remains responsible for the sheet under REACH. MolGod.org prepares documentation and is not the supplier of this substance. |

### 1.4 Emergency telephone number

| | |
|---|---|
| **Emergency telephone** | 112 (EU-wide emergency number) |

Contact the poison centre designated in the country of placing on the market (CLP Art. 45).

## 2. Hazards identification

**GHS:**



**PPE:**



**Prohibitions:**



**Danger**

### Hazard statements (H) [3][4]

| | |
|---|---|
| **H301** | Toxic if swallowed |
| **H311** | Toxic in contact with skin |
| **H331** | Toxic if inhaled |
| **H373** | May cause damage to organs through prolonged or repeated exposure |
| **H411** | Toxic to aquatic life with long lasting effects |

### Precautionary statements (P) [3][4]

| | |
|---|---|
| **P260** | Do not breathe dust/fume/gas/mist/vapours/spray |
| **P264** | Wash thoroughly after handling |
| **P270** | Do not eat, drink or smoke when using this product |
| **P271** | Use only outdoors or in a well-ventilated area |
| **P273** | Avoid release to the environment |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection |
| **P301+P310** | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician |
| **P302+P352** | IF ON SKIN: Wash with plenty of water |
| **P304+P340** | IF INHALED: Remove person to fresh air and keep comfortable for breathing |
| **P311** | Call a POISON CENTER or doctor/physician |
| **P312** | Call a POISON CENTER or doctor/physician if you feel unwell |
| **P314** | Get medical advice/attention if you feel unwell |
| **P321** | Specific treatment |
| **P330** | Rinse mouth |
| **P391** | Collect spillage |
| **P403+P233** | Store in a well-ventilated place: Keep container tightly closed |
| **P405** | Store locked up |
| **P501** | Dispose of contents/container to an approved waste collection point |

**Non-harmonised classification (no entry in Annex VI to CLP) — assigned from aggregated ECHA C&L notifications; the H-statements require verification against the official source (ECHA C&L / manufacturer's data sheet).**

WORKING DRAFT · 工作草稿

## 3. Composition/information on ingredients

| | |
|---|---|
| **Substance type** | pure substance |
| **CAS Number** | 89-62-3 |
| **EC number** | 201-924-9 |
| **Molecular formula** | $C_7H_8N_2O_2$ |
| **Concentration** | ≥99% (typical reagent-grade purity — to be confirmed by the supplier's specification) |

## 4. First aid measures



### Inhalation

Move the affected person to fresh air. Keep at rest. Call a physician. Semi-sitting position. Give oxygen if available. If not breathing: artificial respiration (qualified personnel only). [1][2][11]

### Skin contact

Remove contaminated clothing. Rinse skin with soap and water (min. 15 minutes). Call a physician immediately. [1][2][11]

### Eye contact

Rinse eyes with running water (min. 15 minutes). Remove contact lenses if possible. If irritation persists — consult an ophthalmologist. [1][2][11]

### Ingestion

Do NOT induce vomiting (unless directed by a physician). Rinse mouth with water. Never give anything by mouth to an unconscious person. Emergency number: 112 (EU-wide). Contact the poison centre designated in your country (CLP Art. 45). [1][2][11]

### Symptoms and effects

nausea, vomiting, diarrhoea; cough, shortness of breath, headache, dizziness. [3]

### Notes for physician

Requires verification

**Emergency numbers: Emergency: 112 (EU-wide). Poison centre: as designated in the country of placing on the market (CLP Art. 45).**

## 5. Firefighting measures

| | |
|---|---|
| **Suitable extinguishing media** | Adapt extinguishing media to surroundings. CO2, dry powder, foam. |
| **Unsuitable extinguishing media** | No specific restrictions. |
| **Specific hazards** | Thermal decomposition products: CO, CO2, NOx. [12] |
| **Advice for firefighters** | Use self-contained breathing apparatus (SCBA). Full protective suit. |
| **Flash Point** | 157.2°C [7] |

## 6. Accidental release measures

| | |
|---|---|
| **Personal precautions** | Use personal protective equipment (see Section 8). Avoid breathing dust/vapours. [1][2][11] |
| **Environmental precautions** | Prevent entry into sewers, groundwater and surface water. [1][2][11] |
| **Methods for containment and cleaning up** | Absorb with inert material (sand, vermiculite, diatomaceous earth) and collect into sealed, labelled containers. Do not release into drains. [1][2][11] |
| **Related sections** | 8; 13 |

WORKING DRAFT 工作草案

## 7. Handling and storage

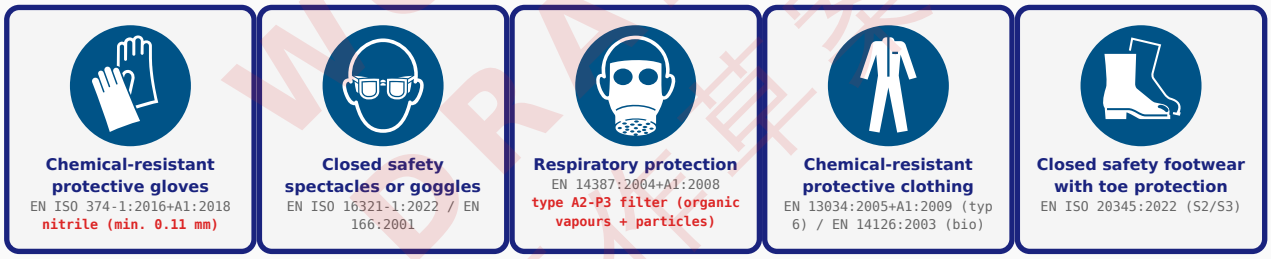
| | |
|---|---|
| **Precautions** | Work in a fume hood or with adequate ventilation. No eating, drinking or smoking in the work area. [1][2][11] |
| **Storage temperature** | Store at room temperature (15-25°C) or as indicated on the label. [1][2][11] |
| **Humidity** | Store in a dry place (<60% RH). [1][2][11] |
| **Light** | Protect from direct sunlight. [1][2][11] |
| **Incompatible materials** | Strong oxidizers. [12] |

## 8. Exposure controls/personal protection

### 8.1 Control parameters

| | |
|---|---|
| **OEL — NDS (Poland)** | No NDS (OEL) value in the available working list — verify in the current MRPiPS regulation before use; do not assume the absence of a limit value. |
| **OEL (EU)** | The EU OEL value has not been verified against the available dataset — check the IOELV/BOELV directives; do not assume the absence of a value. |
| **DNEL** | No data available. |
| **PNEC** | No data available. |

### 8.2 Personal protective equipment (PPE) [5][6][13]




## 9. Physical and chemical properties

| Property (item 9.1) | Value | Source |
|---|---|---|
| **Physical state** | No data available. | |
| **Colour** | No data available. | |
| **Odour** | No data available. | |
| **pH (1% aqueous solution)** | No data available. | |
| **Melting point** | No data available. | |
| **Boiling point** | No data available. | |
| **Flash point** | 157.2°C (experimental data) [7] | |
| **Flammability** | No data available. | |
| **Lower and upper explosion limit** | No data available. | |
| **Density (20°C)** | 1.164 g/cm³ [7] | |
| **Vapour pressure** | 0 kPa (0.000972 mmHg) (experimental data) [7] | |
| **Relative vapour density** | No data available. | |
| **Kinematic viscosity** | No data available. | |

WORKING DRAFT 工作版

| Property (item 9.1) | Value | Source |
|---|---|---|
| **Auto-ignition temperature** | No data available. | |
| **Decomposition temperature** | Not applicable | |
| **Water solubility** | No data available. | |
| **Particle characteristics** | No data available. | |
| **Partition coefficient n-octanol/water (log value)** | 2 [8] | |
| **Molar mass** | 152.15 g/mol [7] | |
| **Molecular formula** | $C_7H_8N_2O_2$ [7] | |
| **Lipinski rule (RO5)** | PASS | |

Where a property above reads "No data available", no measured value was found in the public sources consulted for this substance. The property has not been determined by MolGod.org and no value is inferred. "Not applicable" means the property has no meaning for this substance in the form supplied.

## 10. Stability and reactivity

| | |
|---|---|
| **Reactivity** | Stable under normal storage and handling conditions. |
| **Chemical stability** | Thermally stable under recommended conditions. |
| **Hazardous reactions** | No hazardous reactions known under normal conditions. |
| **Conditions to avoid** | High temperatures, direct sunlight, moisture. |
| **Incompatible materials** | Strong oxidizers. |
| **Decomposition products** | Thermal decomposition products: CO, CO2, NOx. |

## 11. Toxicological information

| | |
|---|---|
| **LD50 (oral)** | No data available. |
| **LD50 (dermal)** | No data available. |
| **LC50 (inhalation)** | No data available. |
| **Skin irritation** | No data available. |
| **Eye irritation** | No data available. |
| **Sensitisation** | No data available. |
| **Mutagenicity** | No data available. |
| **Carcinogenicity** | No data available. |
| **IARC classification (carcinogenicity)** | No individual IARC monograph for this CAS — this is not confirmation of the absence of carcinogenicity (cf. CLP/GHS classification in section 2). |
| **Reproductive toxicity** | No data available. |
| **STOT — single exposure** | No data available. |
| **STOT — repeated exposure** | Category 2 (H373): May cause damage to organs through prolonged or repeated exposure. [3] |
| **Aspiration hazard** | No data available. |

WORKING DRAFT 工作草稿

## 12. Ecological information

| | |
|---|---|
| **Aquatic toxicity** | Classification per ECHA C&L notifications (self-classification, Art. 4(3)): H411 — Toxic to aquatic life with long lasting effects (Aquatic Chronic 2). $LC_{50}$ (fish): 24.8 mg/L (Pimephales promelas, 96 h) [16] |
| **Persistence / biodegradability** | No data available. |
| **Bioaccumulative potential** | log Kow = 2 [8]. Low bioaccumulation potential (log Kow < 4.5 — PBT/vPvB screening criterion per ECHA Guidance R.11). [14][15] |
| **Mobility in soil** | No data available. |
| **PBT/vPvB assessment** | Insufficient data to assess PBT/vPvB. |
| **Endocrine disrupting properties** | No information. |

## 13. Disposal considerations

| | |
|---|---|
| **Disposal method** | Hand over for disposal to licensed contractors in accordance with national and local regulations. Do not discharge into sewers. |
| **Waste code (EWC)** | 16 05 06* — Laboratory and analytical chemicals (e.g. chemical reagents) containing hazardous substances. Verification of the EWC code required. [10] |
| **Packaging** | Cleaned packaging may be recycled. Contaminated packaging must be treated as hazardous waste. |

## 14. Transport information




Class 6.1 — Toxic substances

| | |
|---|---|
| **UN number** | UN 2660 [7] |
| **Transport hazard class** | Suggested from GHS classification — VERIFICATION REQUIRED. |
| **Environmental hazard** | CLP classification (H411) indicates aquatic environmental hazard — marine pollutant marking may be required; confirm per ADR 2.2.9 / IMDG criteria [3] |
| **Special precautions** | Handle as dangerous goods according to the assigned class (ADR/IMDG/IATA); apply the precautions appropriate to that class. |
| **CN/HS code** | CN/HS code: verification required in the Eurostat Combined Nomenclature. |
| **Notes** | UN number per the indicated source. Verify the transport class and packing group in ADR Table A / UN Model Regulations before shipment. [7] |
| **Environmentally hazardous (mark: fish and tree)** | Yes |

## 15. Regulatory information

| | |
|---|---|
| **SVHC status** | SVHC status not verified against the available dataset — check the current ECHA Candidate List; do not assume absence. [1] |
| **REACH Annex XIV** | Not verified against the ECHA Authorisation List — check REACH Annex XIV. [1] |
| **REACH Annex XVII** | Not confirmed in the available Annex XVII dataset — verify against the current ECHA list before placing on the market; do not assume absence of restriction. [1] |

## 16. Other information

Legal status of classification: supplier self-classification under Art. 4(3) CLP — no harmonised entry in Annex VI.Entries with an entry-into-force date after 04.11.2026 were omitted as future (not yet applicable).

**Data aggregated automatically from public reference databases (PubChem, ECHA, NIST and others).**

WORKING DRAFT · 工作草案

## Full text of H statements

| | |
|---|---|
| **H301** | Toxic if swallowed |
| **H311** | Toxic in contact with skin |
| **H331** | Toxic if inhaled |
| **H373** | May cause damage to organs through prolonged or repeated exposure |
| **H411** | Toxic to aquatic life with long lasting effects |

## Full text of P statements

| | |
|---|---|
| **P260** | Do not breathe dust/fume/gas/mist/vapours/spray |
| **P264** | Wash thoroughly after handling |
| **P270** | Do not eat, drink or smoke when using this product |
| **P271** | Use only outdoors or in a well-ventilated area |
| **P273** | Avoid release to the environment |
| **P280** | Wear protective gloves/protective clothing/eye protection/face protection |
| **P301+P310** | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician |
| **P302+P352** | IF ON SKIN: Wash with plenty of water |
| **P304+P340** | IF INHALED: Remove person to fresh air and keep comfortable for breathing |
| **P311** | Call a POISON CENTER or doctor/physician |
| **P312** | Call a POISON CENTER or doctor/physician if you feel unwell |
| **P314** | Get medical advice/attention if you feel unwell |
| **P321** | Specific treatment |
| **P330** | Rinse mouth |
| **P391** | Collect spillage |
| **P403+P233** | Store in a well-ventilated place: Keep container tightly closed |
| **P405** | Store locked up |
| **P501** | Dispose of contents/container to an approved waste collection point |

## Abbreviations

| | |
|---|---|
| **ADR** | European Agreement concerning the International Carriage of Dangerous Goods by Road |
| **ATE** | Acute Toxicity Estimate |
| **CAS** | Chemical Abstracts Service |
| **CLP** | Classification, Labelling and Packaging (Reg. (EC) 1272/2008) |
| **CMR** | Carcinogenic, Mutagenic, toxic to Reproduction |
| **DNEL** | Derived No-Effect Level |
| **EC** | European Community number |
| **EPI** | Personal protective equipment |
| **GHS** | Globally Harmonized System |
| **IATA** | International Air Transport Association |
| **IMDG** | International Maritime Dangerous Goods Code |
| **SDS** | Safety Data Sheet |
| **LC50** | Lethal Concentration, 50% |
| **LD50** | Lethal Dose, 50% |
| **NDS** | Maximum admissible concentration (workplace, PL) |
| **NDSCh** | Short-term exposure limit (PL) |
| **OEL** | Occupational Exposure Limit |

WORKING DRAFT 工作草稿

| | |
|---|---|
| **PBT** | Persistent, Bioaccumulative and Toxic |
| **PNEC** | Predicted No-Effect Concentration |
| **REACH** | Registration, Evaluation, Authorisation and Restriction of Chemicals (Reg. (EC) 1907/2006) |
| **STOT** | Specific Target Organ Toxicity |
| **SVHC** | Substance of Very High Concern |
| **TPSA** | Topological Polar Surface Area |
| **vPvB** | very Persistent and very Bioaccumulative |

## Version history

| | |
|---|---|
| **v10 (04.11.2026)** | Based on supplier self-classification (ECHA C&L notifications; no harmonised entry in Annex VI). |

## References


[1] EP and Council. Reg.(EC) No 1907/2006 (REACH). Art.31, Annex II. OJ EU L 396/2006. URL: https://eur-lex.europa.eu/eli/reg/2006/1907/oj Accessed: 2026-11-04.

[2] European Commission. Reg.(EU) 2020/878 — amending Annex II REACH. OJ EU L 203/2020. From 01.01.2023. URL: https://eur-lex.europa.eu/eli/reg/2020/878/oj Accessed: 2026-11-04.

[3] EP and Council. Reg.(EC) 1272/2008 (CLP) + ATP 23. OJ EU L 353/2008. (2026-07-07) URL: https://eur-lex.europa.eu/eli/reg/2008/1272/oj Accessed: 2026-11-04.

[4] United Nations. GHS Rev.9. ST/SG/AC.10/30/Rev.9. New York and Geneva: United Nations, 2021. URL: https://unece.org/transport/dangerous-goods/ghs-rev9-2021 Accessed: 2026-11-04.

[5] ISO. ISO 7010:2019 — Graphical symbols. Safety signs. URL: https://www.iso.org/standard/72424.html Accessed: 2026-11-04.

[6] ISO. ISO 3864-1:2011 — Safety colours and safety signs. URL: https://www.iso.org/standard/51021.html Accessed: 2026-11-04.

[7] PubChem. National Center for Biotechnology Information (NIH/NLM), chemical compound database. URL: https://pubchem.ncbi.nlm.nih.gov/compound/6978

[8] Rumble, J.R., ed. CRC Handbook of Chemistry and Physics. 105th ed. Boca Raton: CRC Press, 2024. URL: https://hbcp.chemnetbase.com

[9] ECHA. REACH Registration Dossier (registered substance, acute toxicity study record). Helsinki: European Chemicals Agency. URL: https://echa.europa.eu/registration-dossier

[10] European Commission. Decision 2000/532/EC establishing a list of wastes (European Waste Catalogue). OJ EU L 226/3. URL: https://eur-lex.europa.eu/eli/dec/2000/532/oj

[11] European Chemicals Agency (ECHA). Guidance on the Compilation of Safety Data Sheets. Version 4.0. Helsinki: European Chemicals Agency, 2020. URL: https://echa.europa.eu/documents/10162/2324906/sds_en.pdf

[12] Urben, P.G., ed. Bretherick's Handbook of Reactive Chemical Hazards. 8th ed. Oxford: Academic Press.

[13] CEN. Personal protective equipment standards (EN ISO 374-1, EN 166, EN 149, EN 14387, EN ISO 20345). Brussels: European Committee for Standardization.

[14] ECHA. Guidance on Information Requirements and Chemical Safety Assessment, Chapter R.11: PBT/vPvB Assessment. Helsinki: European Chemicals Agency. URL: https://echa.europa.eu/guidance-documents/guidance-on-information-requirements-and-chemical-safety-assessment

[15] European Parliament and Council. Regulation (EC) No 1907/2006 (REACH), Annex XIII — Criteria for the identification of PBT and vPvB substances. OJ EU L 396/2006 (consolidated). URL: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02006R1907-20140410

[16] U.S. EPA. ECOTOX Knowledgebase. Washington, DC: U.S. Environmental Protection Agency. URL: https://cfpub.epa.gov/ecotox/

[17] MRiPS Regulation of 12.06.2018 — NDS/NDN. Journal of Laws 2024 item 1017. URL: https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20240001017 Accessed: 2026-11-04.


## External links

NIST: https://webbook.nist.gov/cgi/cbook.cgi?ID=89-62-3

**NFPA 704** (supplementary information — NFPA/USA system; not a required element of an EU safety data sheet under REACH Annex II)





**Legal notice:** This document was generated automatically from data provided by PubChem (NIH), ECHA, NIST WebBook, ChemSpider (RSC) and other public databases. It DOES NOT REPLACE an approved Safety Data Sheet (SDS) compliant with Regulation (EC) No 1907/2006 (REACH). Before using the substance, verify the data against the manufacturer's current SDS.


**Generator:** Document generated automatically from supplier self-classification (ECHA C&L notifications) and public physicochemical databases.
**Author:** www.MolGod.org — platform for automated safety data sheets (SDS).
Issue date: 04.11.2026 | Document version: 10



WORKING