SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: \( p \)-Anisidine

Product Number: A88255
Brand: Aldrich
REACH No.: This product is a mixture. REACH Registration Number see section 3.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO  63103
UNITED STATES

Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 2), H300
Acute toxicity, Inhalation (Category 2), H330
Acute toxicity, Dermal (Category 1), H310
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - repeated exposure (Category 2), H373
Short-term (acute) aquatic hazard (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.
2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word  Danger

Hazard statement(s)
H300 + H310 + H330  Fatal if swallowed, in contact with skin or if inhaled.
H350  May cause cancer.
H373  May cause damage to organs through prolonged or repeated exposure.
H400  Very toxic to aquatic life.

Precautionary statement(s)
P202  Do not handle until all safety precautions have been read and understood.
P260  Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P273  Avoid release to the environment.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352 + P310  IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/ doctor.
P304 + P340 + P310  IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

Supplemental Hazard Statements

Reduced Labeling (<= 125 ml)

Pictogram

Signal Word  Danger

Hazard statement(s)
H350  May cause cancer.
H300 + H310 + H330  Fatal if swallowed, in contact with skin or if inhaled.

Precautionary statement(s)
P202  Do not handle until all safety precautions have been read and understood.
P260  Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352 + P310  IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/ doctor.
P304 + P340 + P310  IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

Supplemental Hazard Statements  none

The life science business of Merck operates as MilliporeSigma in the US and Canada
2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients
3.2 Mixtures
Syonyms: 4-Aminoanisole, 4-Methoxyaniline

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>p-Anisidine</td>
<td>Acute Tox. 2; Acute Tox. 1; STOT RE 2; Aquatic Acute 1; H300, H330, H310, H373, H400 M-Factor - Aquatic Acute: 10</td>
<td>&gt;= 90 - &lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>104-94-9</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-254-2</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>612-112-00-2 *</td>
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</tbody>
</table>

o-Anisidine Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>o-Anisidine</td>
<td>Acute Tox. 3; Muta. 2; Carc. 1B; H301, H331, H311, H341, H350</td>
<td>&gt;= 0.1 - &lt; 1 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>90-04-0</td>
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</tr>
<tr>
<td>EC-No.</td>
<td>201-963-1</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>612-035-00-4 *</td>
<td></td>
</tr>
</tbody>
</table>

*A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures
4.1 Description of first-aid measures
**General advice**
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

**If inhaled**
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

**In case of skin contact**
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
In case of eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed
If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

 Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Nitrogen oxides (NOx)
Carbon oxides
Nitrogen oxides (NOx)
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information
Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid generation and inhalation of dusts in all circumstances. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.
6.2 **Environmental precautions**  
Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up**  
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 **Reference to other sections**  
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**

*Advice on safe handling*  
Work under hood. Do not inhale substance/mixture.

*Hygiene measures*  
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

*Storage conditions*  
Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.  
Air sensitive. Moisture sensitive. Store under inert gas.

*Storage class*  
Storage class (TRGS 510): 6.1A: Combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 **Specific end use(s)**  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

*Ingredients with workplace control parameters*

8.2 **Exposure controls**

*Personal protective equipment*

**Eye/face protection**  
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**  
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

**Full contact**
Material: Nitrile rubber  
Minimum layer thickness: 0,11 mm  
Break through time: 480 min  
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

**Splash contact**
Material: Nitrile rubber  
Minimum layer thickness: 0,11 mm  
Break through time: 480 min  
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

**Respiratory protection**
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.
Recommended Filter type: Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Control of environmental exposure**
Do not let product enter drains.

---

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

a) Physical state: solid  
b) Color: dark brown  
c) Odor: No data available  
d) Melting point/freezing point: Melting point/range: 56 - 59 °C - lit.  
e) Initial boiling point and boiling range: 240 - 243 °C - lit.
f) Flammability (solid, gas)  No data available

h) Flash point  122 °C - closed cup

j) Decomposition temperature  No data available

m) Water solubility  No data available

n) Partition coefficient: n-octanol/water  No data available

o) Vapor pressure  No data available

p) Density  No data available

q) Relative vapor density  No data available

r) Particle characteristics  No data available

s) Explosive properties  Not classified as explosive.

t) Oxidizing properties  none

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
No data available
10.4 Conditions to avoid
Strong heating.

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Mixture

Acute toxicity
Oral: No data available
Acute toxicity estimate Inhalation - 4 h - 0,0501 mg/l - dust/mist (Calculation method)

Acute toxicity estimate Dermal - 5 mg/kg
(Calculation method)

Skin corrosion/irritation
Remarks: No data available

Serious eye damage/eye irritation
Remarks: No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Possible carcinogen.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Remarks: No data available
Mixture may cause damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

11.2 Additional Information

Endocrine disrupting properties

Product:
Assessment The substance/mixture does not contain
components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

**Components**

**p-Anisidine**

**Acute toxicity**
Acute toxicity estimate Oral - 45 mg/kg
(Expert judgment)
Oral: No data available
Acute toxicity estimate Inhalation - 4,0 h - 0,0501 mg/l - dust/mist
(Expert judgment)
Acute toxicity estimate Dermal - 5 mg/kg
(Expert judgment)

**Skin corrosion/irritation**
No data available

**Serious eye damage/eye irritation**
No data available

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
Test Type: Ames test
Test system: Salmonella typhimurium
Result: positive
Species: Drosophila melanogaster - male and female
Result: negative
Remarks: (ECHA)

**Carcinogenicity**
This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
May cause damage to organs through prolonged or repeated exposure.
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Aspiration hazard**
No data available
o-Anisidine

**Acute toxicity**
LD50 Oral - Rat - male and female - 1.890 mg/kg (OECD Test Guideline 401)
LC50 Inhalation - Rat - male and female - 4 h - > 3,87 mg/l - aerosol (OECD Test Guideline 403)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - Rabbit
Result: No skin irritation - 4 h (OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: No eye irritation - 24 h (OECD Test Guideline 405)

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
In vitro tests showed mutagenic effects
Test Type: Ames test
Test system: S. typhimurium
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female
Result: negative

**Carcinogenicity**
This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
Possible human carcinogen

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

---

**SECTION 12: Ecological information**

**12.1 Toxicity**

**Mixture**
No data available
12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties
**Product:**
Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects
No data available

**Components**

**p-Anisidine**
No data available

Toxicity to daphnia and other aquatic invertebrates: semi-static test EC50 - Daphnia magna (Water flea) - 4,12 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae: static test EC50 - Chlorella vulgaris (Fresh water algae) - 0,9 mg/l - 72 h (OECD Test Guideline 201)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): flow-through test NOEC - Daphnia magna (Water flea) - 0,125 mg/l - 21 d (OECD Test Guideline 202)

**o-Anisidine**

Toxicity to daphnia and other aquatic invertebrates: static test EC50 - Daphnia magna (Water flea) - 2,18 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae: static test EC50 - Desmodesmus subspicatus (green algae) - 33,9 mg/l - 72 h (OECD Test Guideline 201)
SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product**
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

14.1 UN number

| ADR/RID: 2811 | IMDG: 2811 | IATA: 2811 |

14.2 UN proper shipping name

| ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (p-Anisidine) | IMDG: TOXIC SOLID, ORGANIC, N.O.S. (p-Anisidine) | IATA: Toxic solid, organic, n.o.s. (p-Anisidine) |

14.3 Transport hazard class(es)

| ADR/RID: 6.1 | IMDG: 6.1 | IATA: 6.1 |

14.4 Packaging group

| ADR/RID: III | IMDG: III | IATA: III |

14.5 Environmental hazards

| ADR/RID: yes | IMDG Marine pollutant: no | IATA: no |

14.6 Special precautions for user

| Tunnel restriction code : (E) |
| Further information : No data available |

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**Authorisations and/or restrictions on use**

- **REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59):** o-Anisidine
- **REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII):** o-Anisidine

**National legislation**

Other regulations
Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

- H300 Fatal if swallowed.
- H300 + H310 + Fatal if swallowed, in contact with skin or if inhaled.
- H330 May cause damage to organs through prolonged or repeated exposure.
- H341 Toxic in contact with skin.
- H350 Fatal if inhaled.
- H373 Toxic if inhaled.
- H400 Suspected of causing genetic defects.
**Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Classification of the mixture**

<table>
<thead>
<tr>
<th>Classification procedure:</th>
<th>H300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox.2</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Acute Tox.2</td>
<td>H330</td>
</tr>
<tr>
<td>Acute Tox.1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Carc.1B</td>
<td>H310</td>
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<td>Calculation method</td>
<td></td>
</tr>
<tr>
<td>STOT RE2</td>
<td>H350</td>
</tr>
<tr>
<td>Aquatic Acute1</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any
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