

## 1. Identification

|   |   |                 |
|---|---|-----------------|
| <b>Product identifier</b>                                     | <b>4-Aminophenol</b>  |                 |
| <b>Other means of identification</b>                          |   |                 |
| <b>Catalog number</b>   | 1021204   |                 |
| <b>CAS number</b>   | 123-30-8  |                 |
| <b>Synonyms</b>   | p-Aminophenol   |                 |
| <b>Chemical name</b>  | 4-Amino-1-hydroxybenzene  |                 |
| <b>Recommended use</b>  | Specified quality tests and assay use only.                               |                 |
| <b>Recommended restrictions</b>                               | Not for use as a drug. Not for administration to humans or animals.       |                 |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |   |                 |
| <b>Manufacturer</b>   |   |                 |
| <b>Company name</b>   | U. S. Pharmacopeia  |                 |
| <b>Address</b>  | 12601 Twinbrook Parkway<br>Rockville<br>MD<br>20852-1790<br>United States |                 |
| <b>Telephone</b>  | RS Technical Services   | 301-816-8129    |
| <b>Website</b>  | www.usp.org   |                 |
| <b>E-mail</b>   | RSTECH@usp.org  |                 |
| <b>Emergency phone number</b>                                 | CHEMTREC within US & Canada   | 1-800-424-9300  |
|   | CHEMTREC outside US & Canada  | +1 703-527-3887 |

## 2. Hazard(s) identification

|                              |   |                     |
|------------------------------|---|---------------------|
| <b>Physical hazards</b>      | Not classified.                                   |                     |
| <b>Health hazards</b>        | Acute toxicity, oral                              | Category 4          |
|                              | Acute toxicity, inhalation                        | Category 4          |
|                              | Serious eye damage/eye irritation                 | Category 2B         |
|                              | Sensitization, respiratory                        | Category 1          |
|                              | Sensitization, skin                               | Category 1          |
|                              | Germ cell mutagenicity                            | Category 2          |
|                              | Specific target organ toxicity, repeated exposure | Category 2 (kidney) |
| <b>Environmental hazards</b> | Not classified.                                   |                     |
| <b>OSHA defined hazards</b>  | Not classified.                                   |                     |
| <b>Label elements</b>        |   |                     |



**Signal word** Danger

**Hazard statement** Harmful if swallowed. Harmful if inhaled. Causes eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Suspected of causing genetic defects. May cause damage to organs (kidney) through prolonged or repeated exposure.

## Precautionary statement

### Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.

### Response

If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If exposed or concerned: Get medical advice/attention.

### Storage

Store locked up.

### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

### Hazard(s) not otherwise classified (HNOC)

None known.

### Supplemental information

None.

## 3. Composition/information on ingredients

### Substance

| Chemical name | Common name and synonyms | CAS number | %   |
|---------------|--------------------------|------------|-----|
| 4-Aminophenol | p-Aminophenol            | 123-30-8   | 100 |

## 4. First-aid measures

### Inhalation

If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if the substance is inhaled. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician or poison control center immediately.

### Skin contact

Rinse skin with water/shower. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin.

### Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

### Ingestion

Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

### Most important symptoms/effects, acute and delayed

May cause an allergic skin reaction. May cause allergic respiratory reaction.

### Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Treatment for overdose of m-Aminophenol may include the following: Establish patent airway, suction if needed, consider intubation for airway control if patient is unconscious, and assist ventilations if necessary. Treat seizures with diazepam. For ingestion, administer activated charcoal. Administer oxygen to cyanotic patients. Methemoglobinemia may be treated with methylene blue. Use lactated Ringer's if signs of hypovolemia are present, and watch for signs of fluid overload. Signs and symptoms may be delayed.

### General information

Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

## 5. Fire-fighting measures

### Suitable extinguishing media

Water. Foam. Dry chemical or CO2. Use fire-extinguishing media appropriate for surrounding materials.

### Unsuitable extinguishing media

None known.

### Specific hazards arising from the chemical

No unusual fire or explosion hazards noted.

### Special protective equipment and precautions for firefighters

Wear suitable protective equipment.

### Fire fighting equipment/instructions

Use water spray to cool unopened containers. As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.  
**General fire hazards** No unusual fire or explosion hazards noted.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Wear appropriate personal protective equipment. Avoid inhalation of dust from the spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** For waste disposal, see section 13 of the SDS. Avoid the generation of dusts during clean-up. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination.

**Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling** As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Select and use containment devices and personal protective equipment based on a risk assessment of material potency and exposure potential.

**Conditions for safe storage, including any incompatibilities** Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

## 8. Exposure controls/personal protection

### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

### Exposure limit values

#### Industrial Use

#### Material

#### Type

#### Value

4-Aminophenol (CAS 123-30-8)

TWA

2 mg/m<sup>3</sup>

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

For laboratory operations, use good technique and limit open handling. Control exposures to below the occupational exposure level (if available). Select and use containment devices and personal protective equipment based on a risk assessment of exposure potential. Cover all containers for solutions and slurries while being transferred.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

#### Skin protection

##### Hand protection

Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.

##### Other

Wear lab coat. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use. Do not wear protective garments in common areas (e.g., cafeterias) or out-of-doors.

#### Respiratory protection

Respirators are generally not required for laboratory operations. Choose respiratory protection appropriate to the task and the level of existing engineering controls.

#### Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

### General hygiene considerations

Handling practices in this SDS are recommendations for laboratory use of reference standards. Procedures for any other uses or quantities should be determined after an appropriate assessment.

## 9. Physical and chemical properties

### Appearance

Appearance descriptions are general information and not specific to any USP lot.

#### Physical state

Solid.

#### Form

Powder.

#### Color

White. Tan. Pink.

### Odor

Odorless. Faint odor.

### Odor threshold

Not available.

|   |   |
|---|---|
| <b>pH</b>   | Not available.  |
| <b>Melting point/freezing point</b>                 | 356 - 374 °F (180 - 190 °C)   |
| <b>Initial boiling point and boiling range</b>      | 543.2 °F (284 °C) (decomposes)  |
|   | 543.2 °F (284 °C) 101.325 kPa   |
| <b>Flash point</b>                                  | Not available.  |
| <b>Evaporation rate</b>                             | Not available.  |
| <b>Flammability (solid, gas)</b>                    | Not available.  |
| <b>Upper/lower flammability or explosive limits</b> |   |
| <b>Flammability limit - lower (%)</b>               | Not available.  |
| <b>Flammability limit - upper (%)</b>               | Not available.  |
| <b>Explosive limit - lower (%)</b>                  | Not available.  |
| <b>Explosive limit - upper (%)</b>                  | Not available.  |
| <b>Vapor pressure</b>                               | Not available.  |
| <b>Vapor density</b>                                | Not available.  |
| <b>Relative density</b>                             | Not available.  |
| <b>Solubility(ies)</b>                              |   |
| <b>Solubility (water)</b>                           | Slightly soluble.   |
| <b>Solubility (other)</b>                           | Acetonitrile: Soluble.<br>Ethyl acetate: Soluble.<br>Acetone: Soluble.<br>Ethanol: Slightly soluble.<br>Chloroform: Practically insoluble.<br>Toluene: Slightly soluble.<br>Dimethyl sulfoxide: Very soluble. |
| <b>Partition coefficient (n-octanol/water)</b>      | 0.04  |
| <b>Auto-ignition temperature</b>                    | Not available.  |
| <b>Decomposition temperature</b>                    | Not available.  |
| <b>Viscosity</b>                                    | Not available.  |
| <b>Other information</b>                            |   |
| <b>Chemical family</b>                              | Aminophenol.  |
| <b>Molecular formula</b>                            | C6-H7-N-O   |
| <b>Molecular weight</b>                             | 109.13 g/mol  |
| <b>pH in aqueous solution</b>                       | 8.45 (10 g/L)   |
| <b>Surface tension</b>                              | 61.13 mN/m (68 °F (20 °C))  |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>Incompatible materials</b>             | Oxidizing agents. Nitric acid. Nitrates. Peroxide. Alkaline metals.                           |
| <b>Hazardous decomposition products</b>   | NOx. Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.         |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| <b>Skin contact</b> | May cause an allergic skin reaction.   |
| <b>Eye contact</b>  | Causes eye irritation.   |

**Ingestion** Harmful if swallowed.  
**Symptoms related to the physical, chemical, and toxicological characteristics** Difficulty in breathing. May cause an allergic skin reaction. Headache. Dizziness. Fainting. Lethargy. Weakness. Confusion. Seizures. Ringing in ears. Irregular heartbeat.

**Information on toxicological effects**

**Acute toxicity** Harmful if inhaled. Harmful if swallowed.

| Product | Species | Test Results |
|---------|---------|--------------|
|---------|---------|--------------|

4-Aminophenol (CAS 123-30-8)

**Acute**

**Dermal**

|      |        |               |
|------|--------|---------------|
| LD50 | Rabbit | > 10000 mg/kg |
|------|--------|---------------|

**Inhalation**

|      |     |                      |
|------|-----|----------------------|
| LC50 | Rat | > 5.91 mg/l, 1 hours |
|------|-----|----------------------|

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Serious eye damage/eye irritation** Causes eye irritation.

**Local effects**

100 mg Eye irritation  
Result: Mild.  
Species: Rabbit  
100 mg/kg Eye irritation, dry powder.  
Result: Mild: Ocular Irritation Index 17/110 (24 hr), 0/110 (72hr)  
Species: Rabbit  
Skin irritation  
Result: Mild.  
Species: Rabbit

**Respiratory or skin sensitization**

**Respiratory sensitization** May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
There have been reports of asthma following occupational exposure to this material.

**Skin sensitization** May cause an allergic skin reaction.

2 % Sensitization: Occlusive patch test  
Result: Positive: Sensitizing in 9/10 animals.  
Species: Guinea pig  
3 % Sensitization: Open epicutaneous test  
Result: Positive: Sensitizing in 4/20 animals.  
Species: Guinea pig

**Germ cell mutagenicity** Suspected of causing genetic defects.

**Mutagenicity**

Ames test  
Result: Negative.  
Micronucleus  
Result: Positive.  
Mouse lymphoma assay  
Result: Positive.  
Mutagenicity: In vivo mouse sperm morphology study  
Result: Positive.  
Sister chromatid exchange  
Result: Positive.

**Carcinogenicity** Knowledge about carcinogenicity is incomplete.

0 - 30 mg/kg/day Carcinogenicity, administered by gavage.  
Result: Negative.  
Species: Rat  
Test Duration: 101 weeks

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

## US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

### Reproductivity

0 - 250 mg/kg/day Reproductivity / developmental, administered by gavage during gestation.

Result: High dose was maternally toxic, fetotoxic, and teratogenic.

Species: Rat

100 - 200 mg/kg Reproductivity / developmental, administered intraperitoneally during gestation.

Result: Teratogenicity but no maternal toxicity observed.

Species: Syrian hamster

100 - 200 mg/kg Reproductivity / developmental, administered orally.

Result: No teratogenicity observed.

Species: Syrian hamster

**Specific target organ toxicity - single exposure** Knowledge about health hazard is incomplete.

**Specific target organ toxicity - repeated exposure** May cause damage to organs (kidney) through prolonged or repeated exposure.

**Aspiration hazard** Based on available data, the classification criteria are not met.

## 12. Ecological information

### Ecotoxicity

| Product                      | Species | Test Results  |
|------------------------------|---------|---|
| 4-Aminophenol (CAS 123-30-8) |         |   |
| <b>Aquatic</b>               |         |   |
| Crustacea                    | EC50    | Water flea ( <i>Daphnia magna</i> ) 0.2 - 0.29 mg/l, 48 hours   |
| <i>Acute</i>                 |         |   |
| Fish                         | LC50    | Fathead minnow ( <i>Pimephales promelas</i> ) 24 mg/l, 96 hours<br>Rainbow trout, donaldson trout ( <i>Oncorhynchus mykiss</i> ) 1.2 mg/l, 96 hours |

**Persistence and degradability** No data is available on the degradability of this product.

### Bioaccumulative potential

**Octanol/water partition coefficient log Kow**

0.04

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

### DOT

**UN number** UN2512  
**UN proper shipping name** Aminophenols

|                                   |     |
|-----------------------------------|-----|
| <b>Transport hazard class(es)</b> |     |
| Class                             | 6.1 |
| Subsidiary risk                   | -   |
| <b>Packing group</b>              | III |
| <b>Packaging exceptions</b>       | 153 |
| <b>Packaging non bulk</b>         | 213 |
| <b>Packaging bulk</b>             | 240 |

**IATA**

|                                     |                            |
|-------------------------------------|----------------------------|
| <b>UN number</b>                    | UN2512                     |
| <b>UN proper shipping name</b>      | Aminophenols               |
| <b>Transport hazard class(es)</b>   |                            |
| Class                               | 6.1                        |
| Subsidiary risk                     | -                          |
| <b>Packing group</b>                | III                        |
| <b>Other information</b>            |                            |
| <b>Passenger and cargo aircraft</b> | Allowed with restrictions. |
| <b>Cargo aircraft only</b>          | Allowed with restrictions. |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

**DOT; IATA**



**General information** It is the shipper's responsibility to determine the correct transport classification at the time of shipment.

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

|                          |                        |
|--------------------------|------------------------|
| <b>Hazard categories</b> | Immediate Hazard - Yes |
|                          | Delayed Hazard - Yes   |
|                          | Fire Hazard - No       |
|                          | Pressure Hazard - No   |
|                          | Reactivity Hazard - No |

**SARA 302 Extremely hazardous substance**

Not listed.

|  |     |
|--|-----|
| <b>SARA 311/312 Hazardous chemical</b> | Yes |
|--|-----|

**SARA 313 (TRI reporting)**

Not regulated.

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

## US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

## International Inventories

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | Yes                    |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 06-07-2010

**Revision date** 09-21-2018

**Version #** 03

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