

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

<b>Catalogue Number</b>	CS-ER-00084
<b>Product Name</b>	4-Aminophenol(Secondary Standards traceble to USP)
<b>CAS No.</b>	123-30-8
<b>Category</b>	Secondary Standards
<b>Synonyms</b>	1-Amino-4-hydroxybenzene; Paracetamol Impurity K; p-Hydroxyphenylamine; Rodinal
<b>Brand</b>	Clearsynth Labs Ltd.
<b>Identified uses</b>	Laboratory Chemicals
<b>Uses advised against</b>	Not available
<b>Company</b>	Clearsynth Labs Ltd. Mumbai, India
<b>Emergency Phone #</b>	+91-22-245045900
<b>REACH No.</b>	Not available

### SECTION 2: Hazards identification

**Disclaimer:** This is sample MSDS. Please email [sales@clearsynth.com](mailto:sales@clearsynth.com) for more details.

#### 2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Acute toxicity (Category 4)

#### 2.2 Label Elements

**Signal Word:** Warning



#### Hazard Statement(s)

Code	Statement
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H341	Not available
H400	Not available

H410	Not available
H302+H332	Harmful if swallowed. Harmful if inhaled.
H317	May cause an allergic skin reaction.
H373	Not available
H320	Not available
H334	Not available
H361	Not available
H316	Not available
H370	Not available
H372	Not available

### Precautionary Statement(s)

Code	Statement
P203	Not available
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P273	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P317	Not available
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P317	Not available
P318	Not available
P330	Not available
P391	Not available
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulation
P260	Not available
P272	Not available

P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P319	Get medical help if you feel unwell.
P321	Specific treatment (see ... on this label).
P333+P317	Not available
P362+P364	Take off contaminated clothing and wash it before reuse.
P233	Not available
P264+P265	Not available
P284	Not available
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present
P337+P317	If eye irritation persists: Get medical help.
P342+P316	Not available
P403	Not available
P308+P316	Not available
P332+P317	If skin irritation occurs: Get medical help.

### SECTION 3: Composition / information on ingredients

#### 3.1 Substance

Component : 4-Aminophenol(Secondary Standards traceble to USP)

CAS Number : 123-30-8

Molecular Formula : C6H7NO

Molecular Weight : 109.13

Parent Chemical : Mesalazine

Synonyms : 1-Amino-4-hydroxybenzene; Paracetamol Impurity K; p-Hydroxyphenylamine; Rodinal

Concentration : Not available

### SECTION 4: First aid measures

#### SECTION 4: First-aid measures

##### 4.1 Description of first aid measures

- General advice: Remove contaminated clothing and shoes. Seek medical attention if symptoms persist or are severe.
- Inhalation: Move person to fresh air. If breathing is difficult, seek medical attention.
- Skin contact: Wash with plenty of water and soap. Get medical attention if irritation develops or persists.
- Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.
- Ingestion: Rinse mouth. Do not induce vomiting unless directed by medical personnel. Seek medical attention.

#### 4.2 Most important symptoms and effects, both acute and delayed

- Not available.

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

- Treat symptomatically. No data available.

### SECTION 5: Firefighting measures

#### SECTION 5: Fire-fighting measures

##### 5.1 Extinguishing media

- Suitable extinguishing media: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide.
- Unsuitable extinguishing media: Not available.

##### 5.2 Special hazards arising from the substance or mixture

- Fire hazard: Not available.
- Hazardous combustion products: Not available.

##### 5.3 Advice for firefighters

- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Use water spray to cool unopened containers.
- Avoid inhalation of combustion products.

### SECTION 6: Accidental release measures

#### SECTION 6: Accidental release measures

##### 6.1 Personal precautions, protective equipment and emergency procedures

- Avoid dust formation. Avoid breathing dust.
- Use appropriate personal protective equipment (see Section 8).
- Ensure adequate ventilation.

##### 6.2 Environmental precautions

- Prevent further leakage or spillage if safe to do so.
- Avoid release to the environment. Do not allow to enter drains/surface waters/groundwater.

##### 6.3 Methods and material for containment and cleaning up

- Collect spilled material using methods that minimize dust generation.
- Place in a suitable, closed container for disposal.
- Clean contaminated area with water and detergent as appropriate.

##### 6.4 Reference to other sections

- See Section 8 for personal protective equipment and Section 13 for disposal considerations.

### SECTION-7: Handling and storage

#### SECTION 7: Handling and storage

##### 7.1 Precautions for safe handling

- Handle in accordance with good industrial hygiene and safety practice.
- Avoid contact with skin and eyes.
- Avoid breathing dust. Avoid dust generation.

- Wash hands thoroughly after handling.

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

- Store in a tightly closed container in a cool, dry, well-ventilated place.
- Protect from moisture. Protect from excessive heat.
- Incompatible materials: Not available.

### 7.3 Specific end use(s)

- Laboratory/analytical standard. No further information available.

## SECTION 8: Exposure controls / personal protection

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

- Occupational exposure limits: Not available.
- Biological limit values: Not available.

#### 8.2 Exposure controls

- Engineering controls: Use local exhaust ventilation or general ventilation to minimize airborne dust.

#### Personal protective equipment (PPE)

- Eye/face protection: Safety glasses with side shields or chemical splash goggles.
- Skin protection: Protective gloves. Protective clothing as appropriate.
- Respiratory protection: If dust is generated and ventilation is inadequate, use a suitable particulate respirator.
- Hygiene measures: Wash hands after handling. Remove and wash contaminated clothing before reuse.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	2.7

Property	Value
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

## SECTION 10: Stability and reactivity

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

- No data available.

#### 10.2 Chemical stability

- Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions

- No data available.

#### 10.4 Conditions to avoid

- Heat, moisture, and dust generation. No further data available.

#### 10.5 Incompatible materials

- Not available.

#### 10.6 Hazardous decomposition products

- Not available.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

- Acute toxicity: 4-Aminobiphenyl requires metabolic activation in order to exert its toxicity. This is catalyzed by N-hydroxylation via cytochrome P450 1A2, then followed by O-sulfation and O-acetylation by sulfotransferase 1A1

and arylamine N-acetyltransferase 2. The metabolites of 4-aminobiphenyl then form adducts with DNA, inducing mutations. 4-Aminobiphenyl and its metabolites may also cross the placenta and have fetal effects. (1, 2, 3, 4). It is also thought that the mode of action involves metabolic activation by N-hydroxylation, followed by N-esterification leading to the formation of a reactive electrophile, which binds covalently to DNA, principally to deoxyguanosine, leading to an increased rate of DNA mutations and ultimately to the development of cancer. In humans and dogs, the urinary bladder urothelium is the target organ, whereas in mice it is the bladder and liver; in other species, other tissues can be involved. Differences in organ specificity are thought to be due to differences in metabolic activation versus inactivation (A15085). LC50 (rat) =>5 mg/m3/1H

- Skin corrosion/irritation: /HUMAN EXPOSURE STUDIES/ Aqueous solutions of 1.0% 3-aminophenol (MAP) and 0.5% 4-aminophenol (PAP) were tested for depigmentation and discoloration after repeated topical application to the skin on one of the forearms of 26 volunteers (20 black and 6 white). The subjects were separated into 2 groups of 13; 1 group received 0.15 mL applications of the PAP solution, and the other group received 0.15 mL of the MAP solution. Sites were washed by the subjects 1 hr after application of the solutions. The solutions were applied to the same sites for 3 consecutive days the first week and for 4 consecutive days the second and third weeks. Three days after the 11th application, the subjects' arms were evaluated for "circumscribed areas on either forearm in which the skin color appeared different from that of the surrounding area." Subjects were asked to comment on the test procedure or any adverse effects experienced during the study. There was no evidence of skin color changes, lightening or darkening, in any of the 6 white subjects. No lightening of skin color was observed in any of the black subjects. A slight darkening of the skin of 2 black subjects treated with the PAP solution was noted. Slight to moderate primary skin irritation was found in 1 subject after three to seven applications of the PAP solution.

- Serious eye damage/eye irritation: No data available.

- Respiratory or skin sensitization: 4-Aminophenol may act as a skin sensitizer and cause contact dermatitis. In addition, inhalation of large amounts can cause methemoglobinemia and bronchial asthma. (T21) /HUMAN EXPOSURE STUDIES/ An examination of 31 employees from a chemical factory producing 4-aminophenol (PAP) and other aromatic compounds was conducted using single 48-hr occlusive patches with five of the suspected chemicals. Ten of the 31 employees reacted positively to PAP in petrolatum at one or more of the applied doses. Generally dose related, these responses ranged from 1+ at 0.1% PAP (1/31) to 2+ (3/31) and 3+ (1/31) at 1% PAP, with 6/10 employees having 1+ reactions at 0.5% PAP. PAP did not induce primary irritant contact dermatitis in any of the 5 controls, and none of the 31 sensitized subjects who were tested with PAP had cross sensitization when later challenged with dinitrochlorobenzene.

- Germ cell mutagenicity: No data available.

- Carcinogenicity: 4-Aminobiphenyl requires metabolic activation in order to exert its toxicity. This is catalyzed by N-hydroxylation via cytochrome P450 1A2, then followed by O-sulfation and O-acetylation by sulfotransferase 1A1 and arylamine N-acetyltransferase 2. The metabolites of 4-aminobiphenyl then form adducts with DNA, inducing mutations. 4-Aminobiphenyl and its metabolites may also cross the placenta and have fetal effects. (1, 2, 3, 4). It is also thought that the mode of action involves metabolic activation by N-hydroxylation, followed by N-esterification leading to the formation of a reactive electrophile, which binds covalently to DNA, principally to deoxyguanosine, leading to an increased rate of DNA mutations and ultimately to the development of cancer. In humans and dogs, the urinary bladder urothelium is the target organ, whereas in mice it is the bladder and liver; in other species, other tissues can be involved. Differences in organ specificity are thought to be due to differences in metabolic activation versus inactivation (A15085).

- Reproductive toxicity: /SIGNS AND SYMPTOMS/ Short term exposure: Aminophenols can be absorbed through the skin, thereby increasing exposure. Can cause lung irritation. Poisonous if swallowed. These chemicals lower the blood's ability to carry oxygen (methemoglobinemia). This condition causes a bluish color to the skin and lips, headaches, dizziness; higher exposures can result in unconsciousness and death. Irritates eyes, skin, and respiratory tract. Skin contact can cause burning sensation and rash ... May produce dermatitis,

methemoglobinemia, bronchial asthma, and restlessness. Long term exposure: prolonged or repeated contact can cause blood damage, skin disorders, liver, kidney, and brain damage. Aminophenols may cause mutations, and there is limited teratogenic evidence. Skin allergy or asthma may develop; future exposures, even in low doses, can cause symptoms to occur. /Aminophenols/

- STOT-single exposure: 4-Aminobiphenyl requires metabolic activation in order to exert its toxicity. This is catalyzed by N-hydroxylation via cytochrome P450 1A2, then followed by O-sulfation and O-acetylation by sulfotransferase 1A1 and arylamine N-acetyltransferase 2. The metabolites of 4-aminobiphenyl then form adducts with DNA, inducing mutations. 4-Aminobiphenyl and its metabolites may also cross the placenta and have fetal effects. (1, 2, 3, 4). It is also thought that the mode of action involves metabolic activation by N-hydroxylation, followed by N-esterification leading to the formation of a reactive electrophile, which binds covalently to DNA, principally to deoxyguanosine, leading to an increased rate of DNA mutations and ultimately to the development of cancer. In humans and dogs, the urinary bladder urothelium is the target organ, whereas in mice it is the bladder and liver; in other species, other tissues can be involved. Differences in organ specificity are thought to be due to differences in metabolic activation versus inactivation (A15085).

- STOT-repeated exposure: No data available.

- Aspiration hazard: No data available.

Likely routes of exposure

- 4-Aminophenol may act as a skin sensitizer and cause contact dermatitis. In addition, inhalation of large amounts can cause methemoglobinemia and bronchial asthma. (T21)

Symptoms related to the physical, chemical and toxicological characteristics

- 4-Aminobiphenyl requires metabolic activation in order to exert its toxicity. This is catalyzed by N-hydroxylation via cytochrome P450 1A2, then followed by O-sulfation and O-acetylation by sulfotransferase 1A1 and arylamine N-acetyltransferase 2. The metabolites of 4-aminobiphenyl then form adducts with DNA, inducing mutations. 4-Aminobiphenyl and its metabolites may also cross the placenta and have fetal effects. (1, 2, 3, 4). It is also thought that the mode of action involves metabolic activation by N-hydroxylation, followed by N-esterification leading to the formation of a reactive electrophile, which binds covalently to DNA, principally to deoxyguanosine, leading to an increased rate of DNA mutations and ultimately to the development of cancer. In humans and dogs, the urinary bladder urothelium is the target organ, whereas in mice it is the bladder and liver; in other species, other tissues can be involved. Differences in organ specificity are thought to be due to differences in metabolic activation versus inactivation (A15085).

## SECTION 12: Ecological information

SECTION 12: Ecological information

12.1 Toxicity

- Not available.

12.2 Persistence and degradability

- Not available.

12.3 Bioaccumulative potential

- Not available.

12.4 Mobility in soil

- Not available.

12.5 Results of PBT and vPvB assessment

- Not available.

#### 12.6 Endocrine disrupting properties

- Not available.

#### 12.7 Other adverse effects

- Not available.

### SECTION 13: Disposal considerations

#### SECTION 13: Disposal considerations

##### 13.1 Waste treatment methods

- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Do not discharge to drains.
- Contaminated packaging: Dispose of as unused product or according to local requirements.
- Waste codes: Not available.

### SECTION 14: Transport information

#### SECTION 14: Transport information

- UN number: Not available.
- UN proper shipping name: Not available.
- Transport hazard class(es): Not available.
- Packing group: Not available.
- Environmental hazards: Not available.
- Special precautions for user: Not available.
- Transport in bulk according to IMO instruments: Not available.

### SECTION 15: Regulatory information

#### SECTION 15: Regulatory information

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

- Regulatory inventories/status: Not available.
- Specific national/regional regulations: Not available.

##### 15.2 Chemical safety assessment

- No data available.

### SECTION 16: Other information

#### SECTION 16: Other information

- Product name: 4-Aminophenol (Secondary Standards traceble to USP)
- Catalog No.: CS-ER-00084
- CAS No.: 123-30-8
- Synonyms: 1-Amino-4-hydroxybenzene; Paracetamol Impurity K; p-Hydroxyphenylamine; Rodinal
- Supplier: Clearsynth Labs Ltd., Mumbai, India

- Emergency phone: +91-22-245045900

#### Disclaimer

- The information provided is believed to be accurate based on available data, but no warranty is expressed or implied. Users are responsible for determining suitability for their particular application and for compliance with applicable laws and regulations.

#### Revision information

- Revision date: Not available.
- Version: Not available.

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