

## MATERIAL SAFETY DATA SHEET

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Version 1.2

## Section 1 - Product and Company Information

Product Name 4-AMINOPHENOL, 98+%

Product Number A71328

Brand ALDRICH

Company Sigma-Aldrich

Street Address 3050 Spruce Street

City, State, Zip, Country SAINT LOUIS MO 63103 US

Technical Phone: 314 771 5765

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## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
4-AMINOPHENOL	123-30-8	No

Formula C6H7NO

Synonyms Activol \* p-Aminofenol (Czech) \*  
4-Amino-1-hydroxybenzene \* 4-Aminophenol \* Azol \*  
BASF Ursol P Base \* Benzofur P \* Certinal \* C.I.  
76550 \* C.I. Oxidation Base 6A \* Citol \* Durafur  
Brown RB \* Fouramine P \* Furrine 84 \* Furrine P  
Base \* Furro P Base \* p-Hydroxyaniline \*  
4-Hydroxyaniline \* Nako Brown R \* Paranol \*  
Pelagol Grey P Base \* Pelagol P Base \* Renal AC \*  
Rodinal \* Tertral P base \* Unal \* Ursol P \* Ursol  
P base \* Zoba Brown P Base

RTECS Number: SJ5075000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Toxic (USA) Harmful (EU). Dangerous for the environment.  
Harmful in contact with skin and if swallowed. Irritating to eyes,  
respiratory system and skin. Limited evidence of a carcinogenic  
effect. May cause sensitization by inhalation and skin contact.  
Very toxic to aquatic organisms, may cause long-term adverse  
effects in the aquatic environment.  
Possible mutagen. Target organ(s): Blood. Kidneys.

## HMIS RATING

HEALTH: 1\*  
FLAMMABILITY: 0  
REACTIVITY: 0

## NFPA RATING

HEALTH: 1  
FLAMMABILITY: 0  
REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

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#### Section 4 - First Aid Measures

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##### ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

##### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

##### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

##### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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#### Section 5 - Fire Fighting Measures

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##### FLASH POINT

383 °F 195 °C Method: closed cup

##### AUTOIGNITION TEMP

N/A

##### FLAMMABILITY

N/A

##### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

##### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.  
Specific Hazard(s): Emits toxic fumes under fire conditions.

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#### Section 6 - Accidental Release Measures

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##### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

##### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

##### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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#### Section 7 - Handling and Storage

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##### HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.



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## STABILITY

Stable: Stable.

Conditions of Instability: May discolor on exposure to light. May discolor on exposure to air.

Materials to Avoid: Strong oxidizing agents.

## HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

## HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

### SENSITIZATION

Sensitization: May cause allergic reaction.

### TARGET ORGAN(S) OR SYSTEM(S)

Blood. Kidneys. Central nervous system.

### SIGNS AND SYMPTOMS OF EXPOSURE

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

### TOXICITY DATA

Oral

Rat

375 mg/kg

LD50

Remarks: Behavioral:Muscle weakness. Lungs, Thorax, or Respiration:Cyanosis. Nutritional and Gross Metabolic:Changes in:Body temperature decrease.

Inhalation

Rat

> 5 mg/m<sup>3</sup>

LC50

Intraperitoneal

Rat

465 MG/KG

LD50

Remarks: Blood:Methemoglobinemia-Carboxyhemoglobin.

Oral

Rabbit

10000 mg/kg

LD50

Skin  
Rabbit  
> 10000 mg/kg  
LD50

Oral  
Mammal  
1530 mg/kg  
LD50

Skin  
Mammal  
6400 mg/kg  
LD50

Oral  
Bird (wild)  
56.2 mg/kg  
LD50

#### IRRITATION DATA

Skin  
Rabbit  
12.5 mg  
24H  
Remarks: Mild irritation effect

Eyes  
Rabbit  
100 mg  
Remarks: Mild irritation effect

#### CHRONIC EXPOSURE - TERATOGEN

Species: Rat  
Dose: 2500 MG/KG  
Route of Application: Oral  
Exposure Time: (6-15D PREG)  
Result: Specific Developmental Abnormalities: Other developmental abnormalities.

Species: Rat  
Dose: 11100 MG/KG  
Route of Application: Oral  
Exposure Time: (13W PRE/1-20D PREG)  
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rat  
Dose: 563 MG/KG  
Route of Application: Unreported  
Exposure Time: (1-20D PREG)  
Result: Effects on Embryo or Fetus: Fetal death.

Species: Hamster  
Dose: 150 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (8D PREG)  
Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear. Specific

Developmental Abnormalities: Musculoskeletal system.

Species: Hamster

Dose: 100 MG/KG

Route of Application: Intravenous

Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Musculoskeletal system.

#### CHRONIC EXPOSURE - MUTAGEN

Species: Human

Dose: 250 UMOL/L

Cell Type: lymphocyte

Mutation test: DNA damage

Species: Human

Dose: 250 UMOL/L

Cell Type: lymphocyte

Mutation test: DNA inhibition

Species: Mouse

Route: Intraperitoneal

Dose: 50 MG/KG

Mutation test: Micronucleus test

Species: Mouse

Dose: 4600 UG/L (+S9)

Cell Type: lymphocyte

Mutation test: Mutation in microorganisms

Species: Mouse

Dose: 15 MMOL/L

Cell Type: lymphocyte

Mutation test: DNA damage

Species: Mouse

Dose: 10 MG/L

Cell Type: lymphocyte

Mutation test: Other mutation test systems

Species: Mouse

Route: Intraperitoneal

Dose: 100 UMOL/KG

Mutation test: Cytogenetic analysis

Species: Mouse

Dose: 6 MG/L

Cell Type: lymphocyte

Mutation test: Cytogenetic analysis

Species: Mouse

Dose: 4 MG/L

Cell Type: lymphocyte

Mutation test: Mutation in mammalian somatic cells.

Species: Mouse

Route: Intraperitoneal

Dose: 500 MG/KG

Exposure Time: 5D

Mutation test: sperm

Species: Hamster  
Dose: 10 MG/L  
Cell Type: ovary  
Mutation test: DNA damage

Species: Hamster  
Dose: 15 UMOL/L  
Cell Type: lung  
Mutation test: DNA inhibition

Species: Hamster  
Dose: 15 MG/L  
Cell Type: ovary  
Mutation test: Other mutation test systems

Species: Hamster  
Dose: 20 MG/L  
Cell Type: ovary  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 30 UMOL/L  
Cell Type: lung  
Mutation test: Sister chromatid exchange

Species: Hamster  
Dose: 10 MG/L  
Cell Type: ovary  
Mutation test: SLN

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Rat  
Dose: 667 MG/KG  
Route of Application: Oral  
Exposure Time: (11D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).  
Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Rat  
Dose: 38850 MG/KG  
Route of Application: Oral  
Exposure Time: (13W PRE/1-20D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).  
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Species: Hamster  
Dose: 200 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (8D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).  
Specific Developmental Abnormalities: Body wall.

Species: Hamster

Dose: 150 MG/KG  
Route of Application: Intravenous  
Exposure Time: (8D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).  
Specific Developmental Abnormalities: Body wall.

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## Section 12 - Ecological Information

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No data available.

### ACUTE ECOTOXICITY TESTS

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 48 h  
Value: 200 - 280 mg/l

Test Type: LC50 Fish  
Species: Onchorhynchus mykiss (Rainbow trout)  
Time: 96 h  
Value: 1.2 mg/l

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## Section 13 - Disposal Considerations

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### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: Aminophenols [(o-; m-; p-)]  
UN#: 2512  
Class: 6.1  
Packing Group: Packing Group III  
Hazard Label: Keep away from food  
PIH: Not PIH

### IATA

Proper Shipping Name: Aminophenols  
IATA UN Number: 2512  
Hazard Class: 6.1  
Packing Group: III

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## Section 15 - Regulatory Information

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### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: Xn N  
Indication of Danger: Harmful. Dangerous for the environment.  
R: 20/22 50/53 68  
Risk Statements: Harmful by inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of irreversible effects.  
S: 28 36/37 60 61  
Safety Statements: After contact with skin, wash immediately with plenty of polyethylene glycol. Wear suitable protective clothing and gloves. This material and its container must be disposed of as hazardous waste. Avoid release to the

environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic (USA) Harmful (EU). Dangerous for the environment.

Risk Statements: Harmful in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin. Limited evidence of a carcinogenic effect. May cause sensitization by inhalation and skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Statements: After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing and gloves. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

US Statements: Possible mutagen. Target organ(s): Blood. Kidneys.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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Section 16 - Other Information

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DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.