

## MATERIAL SAFETY DATA SHEET

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Version 1.6

## Section 1 - Product and Company Information

Product Name 4-ACETAMIDOPHENOL, 98%  
Product Number A7302  
Brand ALDRICH

Company Sigma-Aldrich  
Address 3050 Spruce Street  
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832  
Fax: 800-325-5052  
Emergency Phone: 314-776-6555

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
4-ACETAMIDOPHENOL	103-90-2	No

Formula C8H9NO2

## Synonyms

Abensanil \* Acamol \* Acetagesic \* Acetalgin \*  
Acetamide, N-(p-hydroxyphenyl)- \* Acetamide,  
N-(4-hydroxyphenyl)- \* p-Acetamidophenol \*  
4-Acetamidophenol \* Acetaminofen \* Acetaminophen  
\* p-Acetaminophenol \* N-Acetyl-p-aminophenol \*  
p-Acetylamino phenol \* Algotropyl \* Alvedon \*  
Amadil \* Anaflon \* Anelix \* Apamid \* Apamide \*  
APAP \* Ben-u-ron \* Bickie-mol \* Calpol \* Cetadol  
\* Clixodyne \* Datriil \* Dial-a-gesic \* Dirox \*  
Dymadon \* Eneril \* Febrilix \* Febro-gesic \*  
Febrolin \* Fendon \* Finimal \* Hedex \* Homoolan \*  
p-Hydroxyacetanilide \* 4'-Hydroxyacetanilide \*  
4-Hydroxyanilid kyseliny octove (Czech) \*  
N-(4-Hydroxyphenyl)acetamide \* Lestemp \*  
Liquagesic \* Lonarid \* Lyteca \* Lyteca syrup \*  
Multin \* NAPA (analgesic) \* Napafen \* Napap \*  
Naprinol \* NCI-C55801 \* Nobedon \* Pacemo \*  
Panadol \* Panets \* Paracetamol \* Paracetamole \*  
Paracetamolo (Italian) \* Parmol \* Pedric \*  
Phendon \* Phenol, p-acetamido- \* Pyrinazine \*  
SK-Apap \* Tabalgin \* Tapar \* Temlo \* Tempanal \*  
Tempra \* Tralgon \* Tussapap \* Tylenol \* Valadol \*  
Valgesic

RTECS Number: AE4200000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Harmful.

Harmful if swallowed. Irritating to eyes, respiratory system and skin.

Possible sensitizer. Target organ(s): Liver. Kidneys.

## HMIS RATING

HEALTH: 2\*  
FLAMMABILITY: 0  
REACTIVITY: 0

NFPA RATING

HEALTH: 2  
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

N/A

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.



Autoignition Temp           N/A  
Refractive Index            N/A  
Optical Rotation            N/A  
Miscellaneous Data         N/A  
Solubility                   N/A

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.  
Materials to Avoid: 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: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.  
Ingestion: Harmful if swallowed.

### SENSITIZATION

Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

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

Kidneys. Liver.

### SIGNS AND SYMPTOMS OF EXPOSURE

The chemical, physical, and toxicological properties of this product have not been thoroughly investigated.

### TOXICITY DATA

Oral  
Man  
714 mg/kg  
LDLO  
Remarks: Liver:Other changes.

Oral  
Human  
143 mg/kg  
LDLO  
Remarks: Behavioral:General anesthetic.

Oral  
Child  
360 mg/kg  
LDLO  
Remarks: Gastrointestinal:Nausea or vomiting. Skin and Appendages:Skin: After systemic exposure: Dermatitis, other

Liver:Other changes.

Oral

Human

357 mg/kg

LDLO

Remarks: Gastrointestinal:Nausea or vomiting. Behavioral:Coma.  
Behavioral:Anorexia (human).

Oral

Woman

260 mg/kg

LDLO

Remarks: Kidney, Ureter, Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis).  
Gastrointestinal:Nausea or vomiting. Behavioral:Coma.

Oral

Man

143 mg/kg

LDLO

Remarks: Liver:Jaundice, other or unclassified. Liver:Hepatitis (hepatocellular necrosis), zonal. Behavioral:Anorexia (human).

Oral

Woman

650 mg/kg

LDLO

Remarks: Vascular:BP lowering not characterized in autonomic section. Vascular:Other changes. Nutritional and Gross Metabolic:Changes in:Metabolic acidosis.

Oral

Child

50 mg/kg

LDLO

Remarks: Cardiac:Other changes. Kidney, Ureter, Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis). Lungs, Thorax, or Respiration:Acute pulmonary edema.

Oral

Woman

400 mg/kg

LDLO

Remarks: Behavioral:Coma. Liver:Liver function tests impaired. Nutritional and Gross Metabolic:Changes in:Metabolic alkalosis.

Oral

Child

140 mg/kg

LDLO

Remarks: Behavioral:Coma. Liver:Hepatitis (hepatocellular necrosis), zonal. Blood:Changes in serum composition (e.g., TP, bilirubin, cholesterol).

Oral

Rat

1944 mg/kg

LD50

Intraperitoneal

Rat

1205 MG/KG

LD50

Remarks: Behavioral:Somnolence (general depressed activity).  
Behavioral:Tremor.

Oral

Mouse

338 mg/kg

LD50

Intraperitoneal

Mouse

367 MG/KG

LD50

Remarks: Nutritional and Gross Metabolic:Changes in:Body  
temperature decrease. Behavioral:Analgesia.

Subcutaneous

Mouse

310 MG/KG

LD50

Oral

Guinea pig

2620 mg/kg

LD50

Remarks: Behavioral:Tremor. Behavioral:Somnolence (general  
depressed activity). Behavioral:Altered sleep time (including  
change in righting reflex).

#### CHRONIC EXPOSURE - CARCINOGEN

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

Species: Rat

Route of Application: Oral

Dose: 164 GM/KG

Exposure Time: 78W

Frequency: C

Result: Kidney, Ureter, Bladder:Tumors. Tumorigenic:Carcinogenic  
by RTECS criteria.

Species: Mouse

Route of Application: Oral

Dose: 135 GM/KG

Exposure Time: 77W

Frequency: C

Result: Liver:Tumors. Liver:Hepatitis (hepatocellular necrosis),  
zonal. Tumorigenic:Carcinogenic by RTECS criteria.

Species: Mouse

Route of Application: Oral

Dose: 270 GM/KG

Exposure Time: 77W

Frequency: C

Result: Liver:Tumors. Endocrine:Other changes.  
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat

Route of Application: Oral

Dose: 329 GM/KG

Exposure Time: 78W  
Frequency: C  
Result: Liver:Tumors. Tumorigenic:Carcinogenic by RTECS criteria.

#### IARC CARCINOGEN LIST

Rating: Group 3

#### NTP CARCINOGEN LIST

Rating: Equivocal evidence.  
Species: Rat  
Route: Feed

#### CHRONIC EXPOSURE - TERATOGEN

Species: Woman  
Dose: 417 MG/KG  
Route of Application: Oral  
Exposure Time: (20W PREG)  
Result: Specific Developmental Abnormalities: Hepatobiliary system. Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Rat  
Dose: 12500 MG/KG  
Route of Application: Oral  
Exposure Time: (14D PRE/1-11D PREG)  
Result: Effects on Embryo or Fetus: Cytological changes (including somatic cell genetic material).

Species: Mouse  
Dose: 2500 MG/KG  
Route of Application: Oral  
Exposure Time: (6-15D PREG)  
Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Musculoskeletal system. Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse  
Dose: 2500 MG/KG  
Route of Application: Oral  
Exposure Time: (6-15D PREG)  
Result: Specific Developmental Abnormalities: Urogenital system.

#### CHRONIC EXPOSURE - MUTAGEN

Species: Human  
Route: Oral  
Dose: 42857 UG/KG  
Exposure Time: 8H  
Mutation test: Micronucleus test

Species: Human  
Dose: 300 UMOL/L  
Cell Type: lymphocyte  
Mutation test: DNA inhibition

Species: Human  
Dose: 200 MG/L  
Cell Type: lymphocyte

Mutation test: Other mutation test systems

Species: Human  
Dose: 200 MG/L  
Cell Type: lymphocyte  
Mutation test: Cytogenetic analysis

Species: Human  
Route: Oral  
Dose: 42860 UG/KG  
Mutation test: Cytogenetic analysis

Species: Human  
Route: Oral  
Dose: 42860 UG/KG  
Mutation test: Sister chromatid exchange

Species: Human  
Dose: 1 MMOL/L  
Cell Type: lymphocyte  
Mutation test: Sister chromatid exchange

Species: Rat  
Dose: 10 MMOL/L  
Cell Type: kidney  
Mutation test: Micronucleus test

Species: Rat  
Dose: 10 MMOL/L  
Cell Type: liver  
Mutation test: Unscheduled DNA synthesis

Species: Rat  
Route: Oral  
Dose: 500 MG/KG  
Mutation test: Unscheduled DNA synthesis

Species: Mouse  
Route: Intraperitoneal  
Dose: 100 MG/KG  
Mutation test: Micronucleus test

Species: Mouse  
Dose: 7500 UMOL/L  
Cell Type: liver  
Mutation test: Unscheduled DNA synthesis

Species: Mouse  
Dose: 1 GM/L  
Cell Type: Embryo  
Mutation test: Morphological transformation.

Species: Mouse  
Route: Intraperitoneal  
Dose: 600 MG/KG  
Mutation test: DNA damage

Species: Mouse  
Dose: 1 MMOL/L  
Cell Type: liver  
Mutation test: DNA damage

Species: Mouse  
Route: Oral  
Dose: 84 GM/KG  
Exposure Time: 40W  
Mutation test: Unscheduled DNA synthesis

Species: Mouse  
Route: Oral  
Dose: 50 MG/KG  
Mutation test: Cytogenetic analysis

Species: Mouse  
Route: Intraperitoneal  
Dose: 200 MG/KG  
Mutation test: Cytogenetic analysis

Species: Mouse  
Route: Intraperitoneal  
Dose: 50 MG/KG  
Mutation test: Sister chromatid exchange

Species: Mouse  
Route: Oral  
Dose: 25 MG/KG  
Mutation test: SLN

Species: Hamster  
Dose: 50 MG/L  
Cell Type: lung  
Mutation test: Micronucleus test

Species: Hamster  
Dose: 3 MMOL/L  
Cell Type: lung  
Mutation test: DNA damage

Species: Hamster  
Dose: 160 UMOL/L  
Cell Type: lung  
Mutation test: DNA inhibition

Species: Hamster  
Dose: 3 MMOL/L  
Cell Type: lung  
Mutation test: Other mutation test systems

Species: Hamster  
Dose: 70 MG/L  
Exposure Time: 24H  
Cell Type: ovary  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 60 MG/L  
Cell Type: fibroblast  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 10 MG/L  
Cell Type: lung  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 200 MG/L  
Cell Type: ovary  
Mutation test: Sister chromatid exchange

Species: Hamster  
Dose: 1 MMOL/L  
Cell Type: lung  
Mutation test: Sister chromatid exchange

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Woman  
Dose: 650 MG/KG  
Route of Application: Oral  
Exposure Time: (29W PREG)  
Result: Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Other postnatal measures or effects.

Species: Woman  
Dose: 1300 MG/KG  
Route of Application: Oral  
Exposure Time: (31-32W PREG)  
Result: Effects on Newborn: Other neonatal measures or effects. Effects on Embryo or Fetus: Other effects to embryo. Maternal Effects: Other effects.

Species: Rat  
Dose: 1500 MG/KG  
Route of Application: Oral  
Exposure Time: (8-19D 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).

Species: Rat  
Dose: 1 GM/KG  
Route of Application: Oral  
Exposure Time: (3D PREG)  
Result: Effects on Newborn: Other postnatal measures or effects. Effects on Newborn: Growth statistics (e.g., reduced weight gain). Effects on Newborn: Behavioral.

Species: Rat  
Dose: 35 GM/KG  
Route of Application: Oral  
Exposure Time: (70D MALE)  
Result: Paternal Effects: Testes, epididymis, sperm duct. Paternal Effects: Other effects on male.

Species: Mouse  
Dose: 25 MG/KG  
Route of Application: Oral  
Exposure Time: (1D MALE)  
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Mouse  
Dose: 600 MG/KG  
Route of Application: Oral

Exposure Time: (1D MALE)  
Result: Paternal Effects: Testes, epididymis, sperm duct.  
Paternal Effects: Spermatogenesis (including genetic material,  
sperm morphology, motility, and count).

Species: Rabbit  
Dose: 2 GM/KG  
Route of Application: Oral  
Exposure Time: (1D PRE)  
Result: Effects on Fertility: Other measures of fertility

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## Section 12 - Ecological Information

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No data available.

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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: None  
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

### IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

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## Section 15 - Regulatory Information

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### EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn  
Indication of Danger: Harmful.  
R: 22-36/37/38  
Risk Statements: Harmful if swallowed. Irritating to eyes, respiratory system and skin.  
S: 26-36  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.  
Risk Statements: Harmful if swallowed. Irritating to eyes, respiratory system and skin.  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.  
US Statements: Possible sensitizer. Target organ(s): Liver. 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. 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 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 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.