

## MATERIAL SAFETY DATA SHEET

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Version 1.5

## Section 1 - Product and Company Information

Product Name 4-AMINOPHENYL SULFONE, 97%  
 Product Number A74807  
 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
4,4'-DIAMINODIPHENYL SULFONE	80-08-0	

Formula C12H12N2O2S  
 Synonyms Avlosulfon \* Avlosulphone \* Benzenamine, 4,4'-sulfonylbis- (9CI) \* Bis(p-aminophenyl) sulfone \* Bis(4-aminophenyl) sulfone \* Bis(p-aminophenyl)sulphone \* Bis(4-aminophenyl)sulphone \* Croysulfone \* Croysulphone \* DADPS \* Dapson \* Dapsone \* Dapsonum \* DDS \* DDS (pharmaceutical) \* Diaminodifenilsulfona (Spanish) \* 4,4-Diaminodifenylsulfon (Czech) \* Diamino-4,4'-diphenyl sulfone \* p,p'-Diaminodiphenyl sulfone \* 4,4'-Diaminodiphenyl sulfone \* Diamino-4,4'-diphenyl sulphone \* p,p-Diaminodiphenyl sulphone \* 4,4'-Diaminodiphenyl sulphone \* Di(p-aminophenyl) sulfone \* Di(4-aminophenyl)sulfone \* Di(p-aminophenyl)sulphone \* Di(4-aminophenyl)sulphone \* Diaphenylsulfon \* Diaphenylsulphone \* Diaphenylsulphon \* Diaphenylsulphone \* Diphenasone \* Diphone \* Disulone \* DSS \* Dubronax \* Dumitone \* Eporal \* 1358F \* F 1358 \* Metabolite C \* NCI-C01718 \* Novophone \* NSC-6091 \* NSC 6091D \* Sulfona \* Sulfona-Mae \* Sulfone UCB \* 1,1'-Sulfonylbis(4-aminobenzene) \* 4,4'-Sulfonylbisaniline \* p,p-Sulfonylbisbenzamine \* 4,4'-Sulfonylbisbenzamine \* p,p-Sulfonylbisbenzenamine \* 4,4'-Sulfonylbisbenzenamine \* p,p'-Sulfonyldianiline \* 4,4'-Sulfonyldianiline \* Sulphadione \* 1,1'-Sulphonylbis(4-aminobenzene) \* p,p-Sulphonylbisbenzamine \* 4,4'-Sulphonylbisbenzamine \*

p,p-Sulphonylbisbenzenamine \*  
4,4'-Sulphonylbisbenzenamine \* Sulphonyldianiline  
\* p,p-Sulphonyldianiline \*  
4,4'-Sulphonyldianiline \* Sumicure S \* Tarimyl \*  
Udolac \* WR 448

RTECS Number: BY8925000

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### Section 3 - Hazards Identification

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#### EMERGENCY OVERVIEW

Harmful.  
Harmful if swallowed.  
Target organ(s): Blood.

#### 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

N/A

#### AUTOIGNITION TEMP

N/A

#### FLAMMABILITY

N/A

#### 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 self-contained breathing apparatus, 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.

### STORAGE

Suitable: Keep tightly closed.

### SPECIAL REQUIREMENTS

Light sensitive.

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## Section 8 - Exposure Controls / PPE

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### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

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## Section 9 - Physical/Chemical Properties

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### Appearance

Physical State: Solid  
Color: Slightly yellow  
Form: Fine crystals

### Property

Value At Temperature or Pressure

Molecular Weight

248.3 AMU

pH

N/A

BP/BP Range

N/A

MP/MP Range

175 °C

Freezing Point

N/A

Vapor Pressure

N/A

Vapor Density

N/A

Saturated Vapor Conc.

N/A

SG/Density

N/A

Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
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.

Conditions to Avoid: Light.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Sulfur oxides, 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: May cause skin irritation.

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

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

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

Blood.

### SIGNS AND SYMPTOMS OF EXPOSURE

Can cause hemolytic anemia in those persons with glucose-6-phosphate dehydrogenase deficiency in the erythrocyte.

May cause methemoglobin formation. Agranulocytosis.

### TOXICITY DATA

Oral

Rat

1000 mg/kg

LD50

Intraperitoneal

Rat  
196 MG/KG  
LD50  
Remarks: Peripheral Nerve and Sensation:Flaccid paralysis  
without anesthesia (usually neuromuscular blockage).  
Behavioral:Convulsions or effect on seizure threshold.  
Behavioral:Change in motor activity (specific assay).

Oral  
Mouse  
250 mg/kg  
LD50

Intraperitoneal  
Mouse  
313 MG/KG  
LD50

Subcutaneous  
Mouse  
250 MG/KG  
LD50

Intravenous  
Mouse  
225 MG/KG  
LD50

Skin  
Rabbit  
> 4000 mg/kg  
LD50

Oral  
Guinea pig  
300 mg/kg  
LD50

#### 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: 20 GM/KG  
Exposure Time: 80W  
Frequency: C  
Result: Tumorigenic:Carcinogenic by RTECS criteria.  
Gastrointestinal:Tumors. Blood:Tumors.

Species: Mouse  
Route of Application: Intraperitoneal  
Dose: 1312 MG/KG  
Exposure Time: 8W  
Frequency: I  
Result: Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax,  
or Respiration:Tumors.

Species: Rat  
Route of Application: Oral  
Dose: 39 GM/KG

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

Species: Rat  
Route of Application: Oral  
Dose: 52 GM/KG  
Exposure Time: 2Y  
Frequency: I  
Result: Tumorigenic:Carcinogenic by RTECS criteria.  
Musculoskeletal:Tumors. Blood:Changes in spleen.

Species: Rat  
Route of Application: Oral  
Dose: 78450 MG/KG  
Exposure Time: 2Y  
Frequency: C  
Result: Tumorigenic:Carcinogenic by RTECS criteria.  
Endocrine:Thyroid tumors. Liver:Tumors.

Species: Rat  
Route of Application: Oral  
Dose: 21840 MG/KG  
Exposure Time: 2Y  
Frequency: C  
Result: Tumorigenic:Neoplastic by RTECS criteria. Blood:Tumors.

#### IARC CARCINOGEN LIST

Rating: Group 3

#### NTP CARCINOGEN LIST

Rating: Clear evidence.  
Species: Rat  
Route: Feed

#### CHRONIC EXPOSURE - MUTAGEN

Species: Human  
Dose: 4 MG/L  
Cell Type: leukocyte  
Mutation test: Cytogenetic analysis

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat  
Dose: 2100 MG/KG  
Route of Application: Oral  
Exposure Time: (6W MALE)  
Result: Effects on Fertility: Male fertility index (e.g., # males impregnating females per # males exposed to fertile nonpregnant females). Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

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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 DIRECTIVES CLASSIFICATION

Symbol of Danger: Xn  
Indication of Danger: Harmful.  
R: 22  
Risk Statements: Harmful if swallowed.  
S: 22  
Safety Statements: Do not breathe dust.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Harmful.  
Risk Statements: Harmful if swallowed.  
Safety Statements: Wear suitable protective clothing.  
US Statements: Target organ(s): Blood.

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.  
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