

## MATERIAL SAFETY DATA SHEET

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Version 1.5

## Section 1 - Product and Company Information

Product Name PYROGALLOL, 99%, A.C.S. REAGENT  
Product Number 254002  
Brand SIAL

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
PYROGALLOL	87-66-1	No

Formula C<sub>6</sub>H<sub>6</sub>O<sub>3</sub>  
Synonyms Benzene, 1,2,3-trihydroxy- \* 1,2,3-Benzenetriol \*  
C.I. 76515 \* C.I. Oxidation Base 32 \* Fouramine  
Brown AP \* Fournine PG \* Fournine 85 \* Pyrogallic  
acid \* 1,2,3-Trihydroxybenzen (Czech) \*  
1,2,3-Trihydroxybenzene  
RTECS Number: UX2800000

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Corrosive.

Causes burns. Harmful by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of irreversible effects.

Target organ(s): Blood. Kidneys.

## HMIS RATING

HEALTH: 3\*

FLAMMABILITY: 0

REACTIVITY: 1

## NFPA RATING

HEALTH: 3

FLAMMABILITY: 0

REACTIVITY: 1

\*additional chronic hazards present.

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

## Section 4 - First Aid Measures

## ORAL EXPOSURE

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

#### 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: 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 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: Avoid breathing dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Suitable: Keep tightly closed.

#### SPECIAL REQUIREMENTS

Handle and store under inert gas. Air and light sensitive.

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## Section 8 - Exposure Controls / PPE

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### ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

### 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 full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

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## Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Solid Color: Faintly beige Form: Fine crystals	
Property	Value	At Temperature or Pressure
Molecular Weight	126.11 AMU	
pH	5.8	Concentration: 10 g/l
BP/BP Range	309 °C	760 mmHg
MP/MP Range	132 °C	
Freezing Point	N/A	
Vapor Pressure	10 mmHg	167.7 °C
Vapor Density	4.4 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1.45 g/cm <sup>3</sup>	20 °C
Bulk Density	600 kg/l	
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	Solubility in Water: Soluble. Other Solvents: MOSTORGANIC SOLVENTS	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Conditions of Instability: May discolor on exposure to air.

Materials to Avoid: Oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

### 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 burns.

Skin Absorption: Harmful if absorbed through skin.

Eye Contact: Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Harmful if inhaled.

Ingestion: Harmful if swallowed.

### SENSITIZATION

Skin: May cause allergic skin reaction.

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

Liver. Kidneys. Blood.

### 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. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Studies in animals have shown edema and hyperemia of the lungs, moderate fatty degeneration, round cell infiltration, and necrosis of the liver. The kidney showed hyperemia, necrosis of the epithelium, granular pigmentation, and glomerular nephritis. The heart showed separation of fibers of the myocardium, interfibrillary hemorrhages, infiltration of the endocardium, lesions of the endothelium, and fibrinous deposits in the valves. Changes in bone marrow and myeloid changes in the spleen were observed. Changes in muscle included the disappearance of nuclei in striated muscle, loss of striation, and the swelling of the muscle plasma which coagulates and decomposes.

### CONDITIONS AGGRAVATED BY EXPOSURE

Pyrogallol has a tremendous affinity for oxygen of the blood causing death by respiratory failure. Intoxication signs are vomiting, hypothermia, weakness, muscular incoordination, fine tremors, loss of reflexes, diarrhea, and coma.

### TOXICITY DATA

Oral

Human

28 mg/kg

LDLO

Remarks: Behavioral:Convulsions or effect on seizure threshold.

Lungs, Thorax, or Respiration:Dyspnea. Gastrointestinal:Other

changes.

Subcutaneous

Man

120 MG/KG

LDLO

Remarks: Behavioral:Convulsions or effect on seizure threshold.  
Behavioral:Excitement. Gastrointestinal:Changes in structure or  
function of salivary glands.

Oral

Mouse

300 mg/kg

LD50

Intraperitoneal

Mouse

400 MG/KG

LD50

Subcutaneous

Mouse

566 MG/KG

LD50

Oral

Rabbit

1600 mg/kg

LD50

Remarks: Gastrointestinal:Gastritis. Lungs, Thorax, or  
Respiration:Chronic pulmonary edema.

Oral

Bird (wild)

75 mg/kg

LD50

#### IRRITATION DATA

Skin

Rabbit

2 mg

24H

Remarks: Severe irritation effect

Eyes

Rabbit

20 mg

24H

Remarks: Moderate irritation effect

#### CHRONIC EXPOSURE - CARCINOGEN

Species: Rat

Route of Application: Subcutaneous

Dose: 3950 MG/KG

Exposure Time: 58W

Frequency: I

Result: Tumorigenic:Tumors at site or application.

Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

#### CHRONIC EXPOSURE - MUTAGEN

Species: Mouse  
Route: Intraperitoneal  
Dose: 252 MG/KG  
Mutation test: Micronucleus test

Species: Mouse  
Route: Oral  
Dose: 504 MG/KG  
Mutation test: Micronucleus test

Species: Mouse  
Route: Intraperitoneal  
Dose: 100 UMOL/KG  
Mutation test: Cytogenetic analysis

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

Species: Hamster  
Dose: 100 MG/L  
Cell Type: ovary  
Mutation test: Cytogenetic analysis

Species: Hamster  
Dose: 25 UMOL/L  
Cell Type: lung  
Mutation test: Sister chromatid exchange

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat  
Dose: 3 GM/KG  
Route of Application: Oral  
Exposure Time: (6-15D 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: 5 MG/KG  
Route of Application: Subcutaneous  
Exposure Time: (1D PRE)  
Result: Maternal Effects: Ovaries, fallopian tubes.

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#### Section 12 - Ecological Information

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#### ACUTE ECOTOXICITY TESTS

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 24 h  
Value: 47.8 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 24 h  
Value: 10.0 - 35.0 mg/l

Test Type: LC50 Fish  
Species: Brachydanio rerio  
Time: 96 h  
Value: 41.8 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: Toxic solids, organic, n.o.s.  
UN#: 2811  
Class: 6.1  
Packing Group: Packing Group III  
Hazard Label: Toxic substances.  
PIH: Not PIH

### IATA

Proper Shipping Name: Toxic solid, organic, n.o.s.  
IATA UN Number: 2811  
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  
Indication of Danger: Harmful.  
R: 20/21/22-68-52/53  
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Possible risk of irreversible effects. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
S: 36/37-61  
Safety Statements: Wear suitable protective clothing and gloves. Avoid release to the environment. Refer to special instructions/safety data sheets.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Corrosive.  
Risk Statements: Causes burns. Harmful by inhalation, in contact with skin and if swallowed. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of irreversible effects.  
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.  
US Statements: 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. 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 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.