

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Thiophenol

Product Number : T32808
Brand : Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Phenyl mercaptan
Benzenethiol

Formula : C₆H₆S
Molecular Weight : 110.18 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Benzenethiol			
108-98-5	203-635-3	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Combustible Liquid, Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Irritant

Target Organs

Central nervous system, Liver, Kidney, Adrenal medulla.

Other hazards which do not result in classification

Stench.

HMIS Classification

Health Hazard: 4
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 0

NFPA Rating

Health Hazard: 4
Fire: 2
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be fatal if inhaled. Causes respiratory tract irritation.
Skin Causes skin irritation. May be fatal if absorbed through skin.
Eyes Causes eye irritation.
Ingestion May be fatal if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 50 °C (122 °F) - closed cup

Ignition temperature 450 °C (842 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

Store under inert gas. Air sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Benzenethiol	108-98-5	TWA	0.1 ppm	2004-01-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	Skin contact does contribute to exposure. ACGIH 2004 Adoption				
		TWA	0.5 ppm 2 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	clear, liquid
Colour	colourless
Odour	Stench. unpleasant

Safety data

pH	no data available
Melting point	-15 °C (5 °F)
Boiling point	169 °C (336 °F)
Flash point	50 °C (122 °F) - closed cup
Ignition temperature	450 °C (842 °F)
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	4.5 hPa (3.4 mmHg) at 40 °C (104 °F) 1.9 hPa (1.4 mmHg) at 20 °C (68 °F)
Density	1.073 g/mL at 25 °C (77 °F)
Water solubility	no data available
Relative vapour density	3.8 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Air
Heat, flames and sparks.

Materials to avoid

Do not store near acids., Strong bases, Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 46.2 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Coma. Respiratory disorder

LC50 Inhalation - rat - 4 h - 33 ppm

Remarks: Lungs, Thorax, or Respiration:Respiratory stimulation. Behavioral:Somnolence (general depressed activity). Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Lacrimation.

LD50 Dermal - rabbit - 134 mg/kg

Remarks: Behavioral:Muscle weakness. Behavioral:Ataxia. Cyanosis

Irritation and corrosion

Eyes - rabbit - Severe eye irritation

Sensitisation

no data available

Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity - rat - Oral

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Embryo or Fetus: Other effects to embryo.

Reproductive toxicity - rat - Oral

Maternal Effects: Other effects.

Signs and Symptoms of Exposure

Cough, Shortness of breath, Headache, Nausea, Vomiting

Potential Health Effects

Inhalation	May be fatal if inhaled. Causes respiratory tract irritation.
Skin	Causes skin irritation. May be fatal if absorbed through skin.
Eyes	Causes eye irritation.
Ingestion	May be fatal if swallowed.
Target Organs	Central nervous system, Liver, Kidney, Adrenal medulla.,

Additional Information

RTECS: DC0525000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-Number: 2337 Class: 6.1 (3) Packing group: I

Proper shipping name: Phenyl mercaptan

Marine pollutant: No

Poison Inhalation Hazard: Hazard zone B

IMDG

UN-Number: 2337 Class: 6.1 (3) Packing group: I EMS-No: F-E, S-D

Proper shipping name: PHENYL MERCAPTAN

Marine pollutant: No

IATA

UN-Number: 2337 Class: 6.1 (3)

Proper shipping name: Phenyl mercaptan

IATA Passenger: Not permitted for transport

IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION**OSHA Hazards**

Combustible Liquid, Target Organ Effect, Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption, Irritant

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

	CAS-No.	Revision Date
Benzenethiol	108-98-5	1994-04-24

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Benzenethiol	108-98-5	1994-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Benzenethiol	108-98-5	1994-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Benzenethiol	108-98-5	1994-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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