



# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: L-Cysteine, Free Base  
SYNONYMS: (R)-2-Amino-3-mercaptopropanoic Acid  
PRODUCT NUMBER: C204  
CAS NO: 52-90-4  
NIOSH/RTECS NO: HA1600000  
COMPANY INFO: *PhytoTechnology Laboratories*<sup>®</sup>  
PO Box 12205 Shawnee Mission, KS 66282-2205  
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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent	Hazardous
L-Cysteine, Free Base	52-90-4	>98 %	No exposure limits established by OSHA or ACGIH

## 3. PHYSICAL & CHEMICAL PROPERTIES

Product Description: L-Cysteine, Free Base  
Formula:  $C_3H_7NO_2S$   
Molecular Weight: 121.16 g/mol  
Storage Temperature: RT  
pH (0.10 g/L): Under Development (4.25 – 6.25 suspected range)  
Vapor Density: N/A  
Melting Point: 226-234 °C (Dec)  
Specific Gravity: N/A  
Solubility: Soluble in Water  
Appearance: White to off-white powder  
Odor: Odorless

## 4. HAZARDS IDENTIFICATION

Label Hazard Warnings: Harmful if swallowed. Irritating to eyes, respiratory system, and skin  
Label Precautionary Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.  
Laboratory Protective Equipment: Safety glasses, protective gloves, and lab coat

HMIS Rating:	Health	Flammability	Reactivity	Personal Protection Equipment
	1	0	0	E
NFPA Rating:	Health	Flammability	Reactivity	Special Hazards
	1	0	0	N/A

Storage and Handling Precautions: Store in a tightly sealed container in a cool, dry place. Store away from direct light. Do not breathe dust. Wash thoroughly after handling

## 5. POTENTIAL HEALTH HAZARDS/ TOXICOLOGICAL INFORMATION

Toxicity:	LD <sub>50</sub> (Oral-Rat)(mg/Kg):	1890
	LD <sub>50</sub> (IV-Rat)(mg/Kg):	1140
	LD <sub>50</sub> (Oral-Mouse)(mg/Kg):	660
Carcinogenicity:	NTP:	No
	IARC:	No
	Z List:	No
	OSHA Reg:	No
Effects of Overexposure:	Irritation, itching, gastrointestinal upset, blurred vision, possible reproductive and mutagenic effects.	
Target Organs:	Respiratory system, kidney, bladder	
Medical Conditions Aggravated By Exposure:	None identified	
Routes of Entry:	Ingestion, inhalation, skin and eye contact	

## 6. EMERGENCY AND FIRST AID

Route of Entry	Symptoms	First Aid Procedures
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. <b>Get medical attention.</b>
Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. <b>Get medical attention.</b>
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. <b>Get medical attention if irritation persists.</b>
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. <b>Get medical attention if irritation persists.</b>

## 7. FIRE HAZARDS & FIRE FIGHTING MEASURES

Flash Point (Closed Cup):	N/A	
Flammable Limits:	Upper – N/A %	Lower – N/A %
Fire Extinguishing Media:	Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.	
Special Fire-Fighting Procedures:	In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.	
Unusual Fire & Explosion Hazards:	May emit toxic fumes under fire conditions.	
Toxic Gases Produced:	Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides	

## 8. REACTIVITY & CONDITIONS TO AVOID

Stability:	Stable
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Incompatibles, may be sensitive to light and moist air
Incompatibles:	Strong oxidizing agents, bases
Hazardous Decomposition Products:	Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides

## 9. SPECIAL PRECAUTIONS/PROTECTIVE EQUIPMENT

Ventilation:	Ventilation hood
Respiratory Protection:	A NIOSH/MSHA approved air purifying respirator is recommended where airborne concentrations are expected to exceed exposure limits. Protection provided by purifying respirators is limited.
Eye/Skin Protection:	Have eye-washing facilities readily available where eye contact can occur. Wear chemical safety goggles. Use appropriate chemical protective gloves when handling. Showering and changing into street clothes after work is recommended.

## 10. SPILLS & LEAKS

Spill or Discharge:	Wear suitable protective clothing and a self-contained breathing apparatus if available. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water.
Disposal Procedure:	Dispose in accordance with all applicable federal, state, and local environmental regulations.
EPA Hazardous Waste Number:	N/A

## 11. TRANSPORTATION DATA

Domestic (D.O.T.):	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)	
	Hazard Class:	N/A	
	UN/NA:	N/A	
	Labels:	N/A	
International:			
	IMDG:	Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
		Hazard Class:	N/A
		UN/NA:	N/A
	Labels:	N/A	
IATA:			
		Proper Shipping Name:	CHEMICALS, N.O.S. (NON-REGULATED)
		Hazard Class:	N/A
		UN/NA:	N/A
	Labels:	N/A	

## 12. REGULATORY INFORMATION

### U.S. Federal Regulatory Information

TSCA: Yes

SARA TITLE III:

Section 302 (EHS) Ingredients: No

Section 313 Ingredients: No

Section 304 (EHS/CERCLA) Ingredients: No

SARA TITLE III NOTIFICATION INFORMATION

Acute Health Hazard: No

Chronic Health Hazard: No

Fire Hazard: No

Sudden Release of Pressure Hazard: No

International Regulatory Information

Risk Phrases: 22 – Harmful if swallowed  
36/37/38 – Irritating to eyes, respiratory system, and skin

Safety Phrases: 26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
36 – Wear suitable protective clothing

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