

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Phenyl isothiocyanate

Product Number : 139742  
Brand : Aldrich

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

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Combustible Liquid, Target Organ Effect, Toxic by ingestion, Corrosive

##### Target Organs

Kidney, Bladder

##### Other hazards which do not result in classification

Lachrymator.

##### GHS Classification

Flammable liquids (Category 4)  
Acute toxicity, Oral (Category 3)  
Skin corrosion (Category 1B)  
Serious eye damage (Category 1)  
Respiratory sensitization (Category 1)  
Skin sensitization (Category 1)  
Acute aquatic toxicity (Category 2)

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H227 Combustible liquid  
H301 Toxic if swallowed.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H401 Toxic to aquatic life.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/ physician.

**HMIS Classification**

**Health hazard:** 3  
**Chronic Health Hazard:** \*  
**Flammability:** 2  
**Physical hazards:** 0

**NFPA Rating**

**Health hazard:** 3  
**Fire:** 2  
**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
**Skin** May be harmful if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.  
**Ingestion** Toxic if swallowed.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : PITC  
Formula : C<sub>7</sub>H<sub>5</sub>NS  
Molecular Weight : 135.19 g/mol

Component	Concentration
<b>Phenyl isothiocyanate</b>	
CAS-No. 103-72-0	-
EC-No. 203-138-1	

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**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**

Take off contaminated clothing and shoes immediately. 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. Continue rinsing eyes during transport to hospital.

**If swallowed**

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

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**5. FIREFIGHTING MEASURES**

**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 firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

### **Hazardous combustion products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Sulphur oxides

### **Further information**

Use water spray to cool unopened containers.

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## **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. Discharge into the environment must be avoided.

### **Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

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## **7. HANDLING AND STORAGE**

### **Precautions for safe 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.

### **Conditions for safe 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.

Moisture sensitive.

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## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

### **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. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### **Immersion protection**

Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm

Break through time: > 480 min

Material tested: Vitoject® (Aldrich Z677698, Size M)

#### **Splash protection**

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: > 30 min

Material tested: Butoject® (Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Eye protection**

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Hygiene measures**

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

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **Appearance**

Form	liquid
Colour	colourless

### **Safety data**

pH	no data available
Melting point/freezing point	Melting point/range: -21 °C (-6 °F) - lit.
Boiling point	218 °C (424 °F) - lit.
Flash point	88 °C (190 °F) - closed cup
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	1.132 g/cm <sup>3</sup> at 20 °C (68 °F)
Water solubility	insoluble
Partition coefficient: n-octanol/water	log Pow: > 3
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## **10. STABILITY AND REACTIVITY**

### **Chemical stability**

Stable under recommended storage conditions.

### **Possibility of hazardous reactions**

no data available

### **Conditions to avoid**

Heat. Avoid moisture.  
Heat, flames and sparks.

**Materials to avoid**

Water, Alcohols, Strong bases, Amines, acids, Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx), Sulphur oxides  
Other decomposition products - no data available

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

LD50 Oral - mouse - 87 mg/kg

Remarks: Kidney, Ureter, Bladder:Urine volume increased.

**Inhalation LC50**

no data available

**Dermal LD50**

no data available

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

May cause allergic respiratory and skin reactions

**Germ cell mutagenicity**

Genotoxicity in vivo - Mammal - Skin

Cytogenetic analysis

**Carcinogenicity**

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**

no data available

**Teratogenicity**

Developmental Toxicity - mouse - Subcutaneous

Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Developmental Toxicity - mouse - Subcutaneous

Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities: Eye, ear. Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Ingestion</b>	Toxic if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin burns.
<b>Eyes</b>	Causes eye burns.

**Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

**Synergistic effects**

no data available

**Additional Information**

RTECS: NX9275000

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**12. ECOLOGICAL INFORMATION****Toxicity**

Toxicity to daphnia and other aquatic invertebrates LC50 - Daphnia magna (Water flea) - 0.1 mg/l - 48 h

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic life.

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**13. DISPOSAL CONSIDERATIONS****Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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

UN number: 2927 Class: 6.1 (8) Packing group: II  
Proper shipping name: Toxic liquids, corrosive, organic, n.o.s. (Phenyl isothiocyanate)  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN number: 2927 Class: 6.1 (8) Packing group: II EMS-No: F-A, S-B

Proper shipping name: TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S. (Phenyl isothiocyanate)  
Marine pollutant: No

**IATA**

UN number: 2927 Class: 6.1 (8) Packing group: II  
Proper shipping name: Toxic liquid, corrosive, organic, n.o.s. (Phenyl isothiocyanate)

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**15. REGULATORY INFORMATION**

**OSHA Hazards**

Combustible Liquid, Target Organ Effect, Toxic by ingestion, Corrosive

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**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**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Phenyl isothiocyanate	103-72-0	

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Phenyl isothiocyanate	103-72-0	

**California Prop. 65 Components**

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

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**16. OTHER INFORMATION**

**Further information**

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