

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Benzoyl chloride  
Product Number : 259950  
Brand : Sigma-Aldrich  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # : (314) 776-6555

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C7H5ClO  
Molecular Weight : 140.57 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Benzoyl chloride</b>			
98-88-4	202-710-8	607-012-00-0	-

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Combustible Liquid  
Toxic by inhalation.  
Harmful by ingestion.  
Toxic by skin absorption  
Corrosive  
Carcinogen

#### HMIS Classification

Health Hazard: 3  
Chronic Health Hazard: \*  
Flammability: 2  
Physical hazards: 1

#### NFPA Rating

Health Hazard: 3  
Fire : 2  
Reactivity Hazard: 1

#### Potential Health Effects

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

#### 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. Consult a physician.

##### In case of eye contact

Continue rinsing eyes during transport to hospital. 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 72 °C (162 °F) - closed cup

Ignition temperature 569 °C (1,056 °F)

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### Specific hazards

Container explosion may occur under fire conditions.

##### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

##### Further information

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

##### Environmental precautions

Do not let product enter drains.

##### Methods for cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

#### 7. HANDLING AND STORAGE

##### Handling

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 under inert gas. Moisture sensitive.

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

Components	CAS-No.	Value	Control parameters	Update	Basis
Benzoyl chloride	98-88-4	CEIL	0.5 ppm 2.8 mg/m <sup>3</sup>	1995-05-23	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	1995-1996 Adoption. Refers to Appendix A -- Carcinogens.				

**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**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form liquid  
Colour colourless

**Safety data**

pH 2 at 1 g/l  
Melting point -1 °C (30 °F)  
Boiling point 73 - 74 °C (163 - 165 °F) at 15 hPa (11 mmHg)  
198 °C (388 °F) at 1,013 hPa (760 mmHg)  
Flash point 72 °C (162 °F) - closed cup

Ignition temperature	569 °C (1,056 °F)
Lower explosion limit	1.2 %(V)
Upper explosion limit	4.9 %(V)
Vapour pressure	1 hPa (1 mmHg) at 32 °C (90 °F)
Density	1.212 g/cm <sup>3</sup>
Water solubility	2 g/l
Relative vapour density	4.85 - (Air = 1.0)

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Conditions to avoid

Exposure to moisture.

### Materials to avoid

Strong oxidizing agents, Strong bases, Alcohols

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - rat - 1,900 mg/kg

LC50 Inhalation - rat - 2 h - 1,870 mg/m<sup>3</sup>

LD50 Dermal - rabbit - 790 mg/kg

### Irritation and corrosion

Skin - rabbit - Severe skin irritation - 24 h

Eyes - rabbit - Severe eye irritation

### Sensitisation

no data available

### Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: Group 2A - The agent (mixture) is probably carcinogenic to humans. (Benzoyl chloride)

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.

### Signs and Symptoms of Exposure

spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Lachrymation, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### Potential Health Effects

<b>Inhalation</b>	Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Skin</b>	Toxic if absorbed through skin. Causes skin burns.
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## 12. ECOLOGICAL INFORMATION

#### Elimination information (persistence and degradability)

Biodegradability

#### Ecotoxicity effects

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 34.1 mg/l - 96 h  
LC0 - Brachydanio rerio (zebra fish) - 7.5 mg/l - 96 h

#### 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: 1736 Class: 8 Packing group: II  
Proper shipping name: Benzoyl chloride

#### IMDG

UN-Number: 1736 Class: 8 Packing group: II EMS-No: F-A, S-B  
Proper shipping name: BENZOYL CHLORIDE  
Marine pollutant: No

#### IATA

UN-Number: 1736 Class: 8 Packing group: II  
Proper shipping name: Benzoyl chloride

## 15. REGULATORY INFORMATION

#### OSHA Hazards

Combustible Liquid, Toxic by inhalation., Harmful by ingestion., Toxic by skin absorption, Corrosive, Carcinogen

#### TSCA Status

On TSCA Inventory

**DSL Status**

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

**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**

	CAS-No.	Revision Date
Benzoyl chloride	98-88-4	1987-01-01

**SARA 311/312 Hazards**

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Benzoyl chloride	98-88-4	1987-01-01

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Benzoyl chloride	98-88-4	1987-01-01

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Benzoyl chloride	98-88-4	1987-01-01

**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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