

## BENZOYL CHLORIDE

GHS Safety Data Sheet

Version No:3

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### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NAME

BENZOYL CHLORIDE

#### OTHER NAMES

C7-H5-Cl-O, C6H5COCl, benzoylchloride, "benzenecarbonyl chloride", "benzene carbonyl chloride", "benzoic acid chloride", alpha-chlorobenzaldehyde, 2-chlorobenzaldehyde, 2-chlorobenzaldehyde, "dibenzoyl chloride", "benzaldehyde, alpha-chloro-"

#### PROPER SHIPPING NAME

BENZOYL CHLORIDE

#### PRODUCT USE

Used for acylation, i.e. introduction of the benzoyl group into alcohols, phenols and amines ((Schotten-Baumann reaction); in the manufacture of benzoyl peroxide and dye intermediates. Used in organic analysis for making benzoyl derivatives for identification purposes.

#### SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

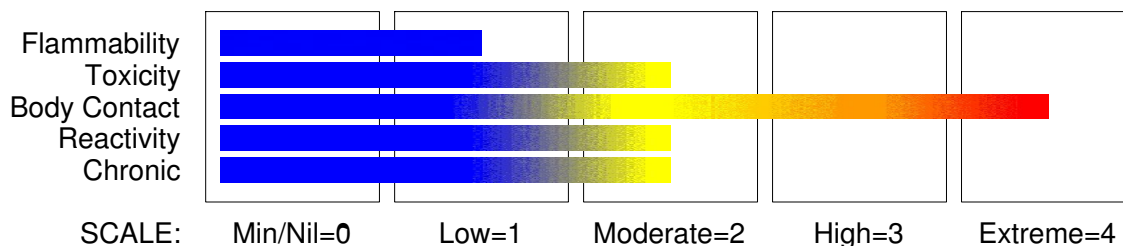
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

#### HAZARD RATINGS



continued...

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## Section 2 - HAZARDS IDENTIFICATION

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### GHS Classification

Acute Toxicity (Dermal) Category 4  
Acute Toxicity (Inhalation) Category 3  
Acute Toxicity (Oral) Category 4  
Flammable Liquid Category 4  
Metal Corrosion Category 1  
Skin Corrosion/Irritation Category 1B



### EMERGENCY OVERVIEW

#### HAZARD

DANGER  
Determined by using GHS criteria:  
H227 H331 H312 H302 H290 H314  
Combustible Liquid  
Toxic if inhaled  
Harmful in contact with skin  
Harmful if swallowed  
May be corrosive to metals  
Causes severe skin burns and eye damage

#### PRECAUTIONARY STATEMENTS

##### Prevention

Wash hands thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/clothing and eye/face protection.  
Avoid breathing dust/fume/gas/mist/vapours/spray.  
Wear protective gloves/clothing  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Use only outdoors or in a well ventilated area.  
Wash thoroughly after handling.  
Use explosion-proof electrical/ventilating/lighting/equipment  
Keep away from flames and hot surfaces.  
Do not breathe dust or mist.

##### Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Immediately call a POISON CENTER or doctor/physician.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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## Section 2 - HAZARDS IDENTIFICATION

Wash contaminated clothing before reuse.  
Keep container tightly closed.  
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
Specific treatment: refer to Label or MSDS.  
Absorb spillage to prevent material damage.  
If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.  
In case of fire, use foam for extinction.  
Call a POISON CENTER or doctor/physician if you feel unwell.  
IF ON SKIN: Gently wash with plenty of soap and water.

### Storage

Store locked up.  
Store away from other materials  
Store in a corrosive resistant container with a resistant liner.

### Disposal

Dispose of contents and container in accordance with relevant legislation.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
benzoyl chloride	98-88-4	> 99
NOTE: On contact with moist air, decomposes to hydrogen chloride	7647-01-0	

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

### EYE

- If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
  - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
  - Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
  - Transport to hospital or doctor without delay.
  - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

continued...

# BENZOYL CHLORIDE

## SKIN

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

## INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

## NOTES TO PHYSICIAN

For acute or short term repeated exposures to strong acids:

- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the desiccating action of the acid on proteins in specific tissues.

## INGESTION:

- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

## SKIN:

- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- Deep second-degree burns may benefit from topical silver sulfadiazine.

## EYE:

- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required.
- Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).

[Ellenhorn and Barceloux: Medical Toxicology].

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
  - Wear full body protective clothing with breathing apparatus.
  - Prevent, by any means available, spillage from entering drains or water course.
  - Use water delivered as a fine spray to control fire and cool adjacent area.
  - Avoid spraying water onto liquid pools.
  - DO NOT approach containers suspected to be hot.
  - Cool fire exposed containers with water spray from a protected location.
  - If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

Pollutant.

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acid smoke. May emit corrosive fumes.

Reacts with water or steam to produce toxic and corrosive fumes.

In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.

Decomposes on heating and produces toxic fumes of:

carbon dioxide (CO<sub>2</sub>).

phosgene.

hydrogen chloride and chlorine.

### Personal Protective Equipment

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

### MAJOR SPILLS

Pollutant - contain spillage.

Remove all ignition sources.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

### EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

benzoyl chloride      60 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

benzoyl chloride      0.5 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

benzoyl chloride      0.5 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:

benzoyl chloride      0.5 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	$\geq 0.1\%$	Toxic (T)	$\geq 3.0\%$
R50	$\geq 0.25\%$	Corrosive (C)	$\geq 5.0\%$
R51	$\geq 2.5\%$		
else	$\geq 10\%$		

where percentage is percentage of ingredient found in the mixture

### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

continued...

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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Personal Protective Equipment advice is contained in Section 8 of the MSDS.

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Avoid contact with moisture.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately and before re-use
- Use good occupational work practice.
- Observe manufacturer's storing/handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

### SUITABLE CONTAINER

Glass container.

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

### STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

Segregate from alcohol, water.

Avoid strong acids, bases.

Acyl halides tend to react violently with protic organic solvents, water, and the aprotic solvents, dimethylformamide and dimethyl sulfoxide. Their facile reaction with ethers is also potentially dangerous. In the absence of diluent or other effective control of reaction rate, sulfoxides may react violently or explosively with certain acyl halides. These violent reactions may be explained in terms of exothermic polymerisation of formaldehyde which is formed under a variety of conditions by interaction of the sulfoxide with reactive halides.

BREITHERICK L.: Handbook of Reactive Chemical Hazards.

Avoid storage sodium azide, dimethylsulfoxide and potassium hydroxide.

### STORAGE REQUIREMENTS

- Store in original containers.
  - Keep containers securely sealed.
  - No smoking, naked lights or ignition sources.
  - Store in a cool, dry, well-ventilated area.
  - Store away from incompatible materials and foodstuff containers.
  - Protect containers against physical damage and check regularly for leaks.
  - Observe manufacturer's storing and handling recommendations.
- NOTE: May develop pressure in containers; open carefully. Vent periodically.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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### EXPOSURE CONTROLS

The following materials had no OELs on our records

- benzoyl chloride: CAS:98- 88- 4
- hydrogen chloride: CAS:7647- 01- 0 CAS:7698- 05- 7

### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
hydrogen chloride		50

### ODOUR SAFETY FACTOR (OSF)

OSF=1.3 (benzoyl chloride)

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

### MATERIAL DATA

Maximum vapour concentration: 680 ppm at 25 C.

The primary basis for the TLV-C is to protect against severe irritation of the eyes and mucous membranes. There is limited evidence that workers engaged in the production of benzoyl chloride and chlorinated toluene derivatives have an excess risk of developing lung cancer. The TLV-C for hydrogen chloride is 5 ppm and benzoyl chloride is believed to be at least as irritating as hydrogen chloride which is one of its hydrolysis products. 2 ppm for 1 minute is reported as being intolerable.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### INGREDIENT DATA

HYDROGEN CHLORIDE:

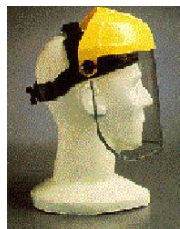
Odour Threshold Value: 0.262 ppm (detection), 10.06 ppm (recognition)

NOTE: Detector tubes for hydrochloric acid, measuring in excess of 1 ppm, are available commercially.

Hydrogen chloride is a strong irritant to the eyes, mucous membranes and skin. Chronic exposure produces a corrosive action on the teeth. Reports of respiratory irritation following short-term exposure at 5 ppm have led to the recommended TLV-C. There is no indication that skin contact with hydrogen chloride elicits systemic poisoning and a skin designation has not been applied.

Exposure of humans to hydrogen chloride at 50 to 100 ppm for 1 hour is reported to be barely tolerable; 35 ppm caused irritation of the throat on short exposure and 10 ppm was the maximal concentration for prolonged exposure. It has been stated that hydrogen chloride at concentrations of 5 ppm is immediately irritating.

### PERSONAL PROTECTION



OR

### EYE

- Safety glasses with side shields.
- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

### HANDS/FEET

- Neoprene gloves.
- PVC gloves.
- Nitrile gloves.
- Impervious, gauntlet length gloves.
- PVC boots.
- PVC safety gumboots.

### OTHER

- Overalls.
- PVC Apron.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:  
" Forsberg Clothing Performance Index" .

The effect(s) of the following substance(s) are taken into account in the computer- generated selection: benzoyl chloride

Protective Material CPI \*.

PVA	A
VITON	A

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

Use in a well-ventilated area.

If risk of inhalation or overexposure exists, wear SAA approved respirator or work in fume hood.

If risk of overexposure exists, wear air supplied breathing apparatus.

Provide adequate ventilation in warehouse or closed storage areas.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### APPEARANCE

Clear, colourless fuming liquid with pungent odour. Vapour causes tears. Violently decomposes in water evolving heat and hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Fumes when exposed to moist air. Mixes with ether, benzene, carbon disulfide and oils.

Fire point: 85 deg. C..

### PHYSICAL PROPERTIES

Liquid.

Corrosive.

continued...

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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Acid.

Contact with water liberates toxic gas.

Reacts violently with water.

Molecular Weight: 140.57

Melting Range (°C): - 0.5

Solubility in water (g/L): Not applicable

pH (1% solution): Not available.

Volatile Component (%vol): Not available.

Relative Vapour Density (air=1): 4.88

Lower Explosive Limit (%): 1.2

Autoignition Temp (°C): Not available.

State: Liquid

Boiling Range (°C): 197

Specific Gravity (water=1): 1.22

pH (as supplied): Not applicable

Vapour Pressure (kPa): 0.13 @ 32 C.

Evaporation Rate: Not available

Flash Point (°C): 72.2

Upper Explosive Limit (%): 4.9

Decomposition Temp (°C): Not available

Viscosity: Not available

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

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## Section 11 - TOXICOLOGICAL INFORMATION

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### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

##### EYE

The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.

When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.

It has either been demonstrated or it is expected that when the material is applied to the eye(s) of animals, it produces severe ocular lesions which are present twenty-four hours or more after instillation.

Exposure to vapour may cause severe discomfort.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

##### SKIN

Skin contact with the material may be harmful; systemic effects may result following absorption.

continued...

# BENZOYL CHLORIDE

## Section 11 - TOXICOLOGICAL INFORMATION

The material can produce chemical burns following direct contact with the skin. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

### INHALED

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation. Inhalation hazard is increased at higher temperatures.

Inhalation of quantities of liquid mist may be extremely hazardous, even lethal due to spasm, extreme irritation of larynx and bronchi, chemical pneumonitis and pulmonary oedema.

The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.

Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).

The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs. Therefore prolonged exposure to respiratory irritants may cause sustained breathing difficulties.

Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

### CHRONIC HEALTH EFFECTS

On the basis, primarily, of animal experiments, concern has been expressed by at least one classification body that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.

Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.

Repeated exposures may cause central nervous system depression. Several cases of malignant respiratory cancer have occurred among workers engaged in the manufacture of benzoyl chloride and its chlorinated toluene derivatives. These have occurred in factories with poor industrial hygiene controls. These cases have occurred in relatively young workers, half of whom were non-smokers. Workers, however, were exposed to several other chemicals including the suspected carcinogen, benzotrithloride.

Additional cases of chronic pharyngitis, chronic sinusitis, hyposmia or anosmia, and skin disorders such as parachroma and warts were reported amongst workers in one Japanese factory.

Female rats receiving twice and thrice applications to the skin showed skin tumours and lung adenomas. IARC concluded that the incidence of tumour formation was not statistically significant.

### TOXICITY AND IRRITATION

#### TOXICITY

Oral (rat) LD50: 1900 mg/kg

Inhalation (human) TClO: 2 ppm/1m [Baker\*]

#### IRRITATION

Nil Reported

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## Section 11 - TOXICOLOGICAL INFORMATION

Inhalation (rat) LC50: 1870 mg/m<sup>3</sup>/2h

Dermal (rabbit) LD50: 790 mg/kg\*

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

HYDROGEN CHLORIDE:

TOXICITY

Inhalation (human) LCLo: 1300 ppm/30m

Inhalation (human) LCLo: 3000 ppm/5m

Inhalation (rat) LC50: 3124 ppm/60m

4701 ppm/30m

IRRITATION

Eye (rabbit): 5 mg/30s - Mild

## Section 12 - ECOLOGICAL INFORMATION

Fish LC50 (96hr.) (mg/l):	35- 180
Half- life Soil - High (hours):	0.0412
Half- life Soil - Low (hours):	0.00472
Half- life Air - High (hours):	1024
Half- life Air - Low (hours):	102
Half- life Surface water - High (hours):	0.0412
Half- life Surface water - Low (hours):	0.00472
Half- life Ground water - High (hours):	0.0412
Half- life Ground water - Low (hours):	0.00472
Aqueous biodegradation - Aerobic - High (hours):	672
Aqueous biodegradation - Aerobic - Low (hours):	168
Aqueous biodegradation - Anaerobic - High (hours):	2688
Aqueous biodegradation - Anaerobic - Low (hours):	672
Photolysis maximum light absorption - High (nano- m):	293
Photolysis maximum light absorption - Low (nano- m):	242
Photooxidation half- life air - High (hours):	1024
Photooxidation half- life air - Low (hours):	102
First order hydrolysis half- life (hours):	0.00472
Acid rate constant [M(H+)- HR]- 1:	0.0412

Toxicity Fish: LC50(96)35-180mg/L

Toxicity invertebrate: LC50(96)180mg/L

Bioaccumulation: not sig

Degradation Biological: not sig

processes Abiotic: RxnOH\*,fast hydrol

## Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

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## Section 14 - TRANSPORTATION INFORMATION

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Labels Required: CORROSIVE  
HAZCHEM: 4W

### UNDG:

Dangerous Goods Class:	8	Subrisk:	None
UN Number:	1736	Packing Group:	II
Shipping Name: BENZOYL CHLORIDE			

### Air Transport IATA:

ICAO/IATA Class:	8	ICAO/IATA Subrisk:	None
UN/ID Number:	1736	Packing Group:	II
ERG Code:	8W		
Shipping name: BENZOYL CHLORIDE			

### Maritime Transport IMDG:

IMDG Class:	8	IMDG Subrisk:	None
UN Number:	1736	Packing Group:	II
EMS Number:	F- A, S- B		
Shipping name: BENZOYL CHLORIDE			

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## Section 15 - REGULATORY INFORMATION

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### REGULATIONS

benzoyl chloride (CAS: 98-88-4) is found on the following regulatory lists;  
International Agency for Research on Cancer (IARC) Carcinogens  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals  
WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established

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## Section 16 - OTHER INFORMATION

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The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to

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## Section 16 - OTHER INFORMATION

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determine the suitability of the information for their particular purpose.

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