

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865  
M A T E R I A L   S A F E T Y   D A T A   S H E E T  
24-HOUR EMERGENCY TELEPHONE -- (908) 859-2151  
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

B1783 -04

BENZOYL CHLORIDE

PAGE: 1

EFFECTIVE: 01/04/94

ISSUED: 01/15/94

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SECTION I - PRODUCT IDENTIFICATION

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PRODUCT NAME: BENZOYL CHLORIDE  
COMMON SYNONYMS: BENZOIC ACID, CHLORIDE; -CHLOROBENZALDEHYDE;  
BENZENECARBONYL CHLORIDE  
CHEMICAL FAMILY: ACID CHLORIDES  
FORMULA: C6H5COCL  
FORMULA WT.: 140.57  
CAS NO.: 98-88-4  
NIOSH/RTECS NO.: DM6600000  
PRODUCT USE: LABORATORY REAGENT  
PRODUCT CODES: 1066

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PRECAUTIONARY LABELING

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BAKER SAF-T-DATA\* SYSTEM

HEALTH	-	3	SEVERE (POISON)
FLAMMABILITY	-	2	MODERATE
REACTIVITY	-	2	MODERATE
CONTACT	-	4	EXTREME (CORROSIVE)

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B  
EXTINGUISHER

U.S. PRECAUTIONARY LABELING

POISON DANGER

COMBUSTIBLE. LACHRYMATOR. CAUSES SEVERE BURNS. MAY BE FATAL IF INHALED.  
HARMFUL IF SWALLOWED.

KEEP AWAY FROM HEAT, SPARKS, FLAME. DO NOT GET IN EYES, ON SKIN, ON CLOTHING.  
DO NOT BREATHE VAPOR. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE  
VENTILATION. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, USE DRY  
CHEMICAL OR CARBON DIOXIDE. DO NOT USE WATER. IN CASE OF SPILL, SOAK UP WITH  
SAND OR EARTH. FLUSH SPILL AREA WITH WATER.

CONTINUED ON PAGE: 2

B1783 -04  
EFFECTIVE: 01/04/94

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PAGE: 2  
ISSUED: 01/15/94

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PRECAUTIONARY LABELING (CONTINUED)

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INTERNATIONAL LABELING

CAUSES BURNS.

IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.

SAF-T-DATA\* STORAGE COLOR CODE: RED STRIPE (STORE SEPARATELY)

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SECTION II - COMPONENTS

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<u>COMPONENT</u>	<u>CAS NO.</u>	<u>WEIGHT %</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
BENZOYL CHLORIDE	98-88-4	90-100	N/E	N/E

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SECTION III - PHYSICAL DATA

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BOILING POINT: 197 C (386 F)  
(AT 760 MM HG)

VAPOR PRESSURE (MMHG): 1.0  
(20 C)

MELTING POINT: -1 C (30 F)  
(AT 760 MM HG)

VAPOR DENSITY (AIR=1): 4.88

SPECIFIC GRAVITY: 1.21  
(H2O=1)

EVAPORATION RATE: N/A

SOLUBILITY(H2O): DECOMPOSES

% VOLATILES BY VOLUME: N/A  
(21 C)

PH: N/A

ODOR THRESHOLD (P.P.M.): N/A

PHYSICAL STATE: LIQUID

COEFFICIENT WATER/OIL DISTRIBUTION: N/A

APPEARANCE & ODOR: CLEAR, COLORLESS FUMING LIQUID. PENETRATING ODOR.

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT (CLOSED CUP): 72 C (162 F)

NFPA 704M RATING: 3-2-1

AUTOIGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS: UPPER - N/A

LOWER - N/A

FIRE EXTINGUISHING MEDIA

USE DRY CHEMICAL OR CARBON DIOXIDE. DO NOT USE WATER.

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE. MOVE EXPOSED CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL; DO NOT GET WATER INSIDE CONTAINERS.

UNUSUAL FIRE & EXPLOSION HAZARDS

REACTS VIOLENTLY WITH WATER PRODUCING HIGHLY TOXIC FUMES. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE OR EXPLOSION. CLOSED CONTAINERS EXPOSED TO HEAT MAY EXPLODE.

TOXIC GASES PRODUCED

HYDROGEN CHLORIDE, PHOSGENE, CARBON MONOXIDE, CARBON DIOXIDE

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT

NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE

NONE IDENTIFIED.

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SECTION V - HEALTH HAZARD DATA

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THRESHOLD LIMIT VALUE (TLV/TWA): NOT ESTABLISHED

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): NOT ESTABLISHED

TOXICITY OF COMPONENTS

NO INFORMATION IS AVAILABLE

CONTINUED ON PAGE: 4

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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CARCINOGENICITY:    NTP: NO            IARC: NO            Z LIST: NO            OSHA REG: NO

CARCINOGENICITY  
NONE IDENTIFIED.

REPRODUCTIVE EFFECTS  
NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION:            IS HARMFUL MAY BE FATAL, SEVERE IRRITATION OR BURNS OF  
RESPIRATORY SYSTEM, PULMONARY EDEMA, LUNG INFLAMMATION

SKIN CONTACT:        SEVERE IRRITATION OR BURNS

EYE CONTACT:         SEVERE IRRITATION OR BURNS

SKIN ABSORPTION: NONE IDENTIFIED

INGESTION:            IRRITATION AND BURNS TO MOUTH AND STOMACH

CHRONIC EFFECTS: CENTRAL NERVOUS SYSTEM DEPRESSION

TARGET ORGANS  
RESPIRATORY SYSTEM, LUNGS, EYES, SKIN, CENTRAL NERVOUS SYSTEM

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE  
NONE IDENTIFIED

PRIMARY ROUTES OF ENTRY  
INHALATION, INGESTION, SKIN CONTACT, EYE CONTACT

EMERGENCY AND FIRST AID PROCEDURES

INGESTION:            CALL A PHYSICIAN. IF SWALLOWED, DO NOT INDUCE VOMITING. IF  
CONSCIOUS, GIVE LARGE AMOUNTS OF WATER.

INHALATION:          IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE  
ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE  
OXYGEN.

SKIN CONTACT: IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF  
WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED  
CLOTHING AND SHOES. WASH CLOTHING BEFORE RE-USE.

CONTINUED ON PAGE: 5

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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EYE CONTACT: IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF  
WATER FOR AT LEAST 15 MINUTES.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: YES CHRONIC: YES FLAMMABILITY: YES PRESSURE: NO REACTIVITY: NO

EXTREMELY HAZARDOUS SUBSTANCE: NO

CERCLA HAZARDOUS SUBSTANCE: YES CONTAINS BENZOYL CHLORIDE (RQ = 1000 LBS)

SARA 313 TOXIC CHEMICALS: YES CONTAINS BENZOYL CHLORIDE

GENERIC CLASS: GENERIC CLASS REMOVED FROM CFR: 7/1/91

TSCA INVENTORY: YES

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SECTION VI - REACTIVITY DATA

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STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: MOISTURE, HEAT, FLAME

INCOMPATIBLES: STRONG OXIDIZING AGENTS, WATER, ALCOHOLS, STRONG BASES

DECOMPOSITION PRODUCTS: PHOSGENE, CARBON MONOXIDE, CARBON DIOXIDE, HYDROGEN  
CHLORIDE

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SECTION VII - SPILL & DISPOSAL PROCEDURES

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STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE

WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. SHUT  
OFF IGNITION SOURCES; NO FLARES, SMOKING, OR FLAMES IN AREA. STOP LEAK IF  
YOU CAN DO SO WITHOUT RISK. NEUTRALIZE SPILL WITH SODA ASH OR LIME. WITH  
CLEAN SHOVEL, CAREFULLY PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND  
COVER. REMOVE FROM SPILL AREA. FLUSH AREA WITH WATER.

DISPOSAL PROCEDURE

DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL  
ENVIRONMENTAL REGULATIONS.

E HAZARDOUS WASTE NUMBER: D002 (CORROSIVE WASTE)

CONTINUED ON PAGE: 6



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SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

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VENTILATION: USE ADEQUATE GENERAL OR LOCAL EXHAUST VENTILATION TO  
KEEP VAPOR AND MIST LEVELS AS LOW AS POSSIBLE.

RESPIRATORY PROTECTION: NONE REQUIRED WHERE ADEQUATE VENTILATION CONDITIONS  
EXIST. IF AIRBORNE CONCENTRATION IS HIGH, A CHEMICAL  
CARTRIDGE RESPIRATOR WITH ACID/ ORGANIC CARTRIDGE IS  
RECOMMENDED. IF CONCENTRATION EXCEEDS CAPACITY OF  
CARTRIDGE RESPIRATOR, A SELF-CONTAINED BREATHING  
APPARATUS IS ADVISED.

EYE/SKIN PROTECTION: SAFETY GOGGLES AND FACE SHIELD, UNIFORM, PROTECTIVE  
SUIT, RUBBER GLOVES ARE RECOMMENDED.

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SECTION IX - STORAGE AND HANDLING PRECAUTIONS

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SAF-T-DATA\* STORAGE COLOR CODE: RED STRIPE (STORE SEPARATELY)

STORAGE REQUIREMENTS

KEEP CONTAINER TIGHTLY CLOSED. STORE AWAY FROM WATER OR LOCATIONS WHERE  
WATER MAY BE USED TO EXTINGUISH FIRE. STORE IN A COOL, WELL-VENTILATED  
AREA AWAY FROM SOURCES OF HEAT, FLAME, OR IGNITION. ISOLATE FROM  
INCOMPATIBLE MATERIALS.

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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: BENZOYL CHLORIDE  
HAZARD CLASS: 8  
UN/NA: UN1736 REPORTABLE QUANTITY: 1000 LBS. PACKAGING GROUP: II  
LABELS: 8 CORROSIVE  
REGULATORY REFERENCES: 49CFR 172.101

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: BENZOYL CHLORIDE  
HAZARD CLASS: 8  
UN: UN1736 MARINE POLLUTANTS: NO  
LABELS: CORROSIVE

I.M.O. PAGE: 8123  
PACKAGING GROUP: II

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PAGE: 7

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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION (CONTINUED)

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REGULATORY REFERENCES: 49CFR PART 176; IMDG CODE

AIR (I.C.A.O.)

PROPER SHIPPING NAME: BENZOYL CHLORIDE

HAZARD CLASS: 8

UN: UN1736

PACKAGING GROUP: II

LABELS: CORROSIVE

REGULATORY REFERENCES: 49CFR PART 175; ICAO=== WE BELIEVE THE TRANSPORTATION DATA AND REFERENCES CONTAINED HEREIN TO BE FACTUAL AND THE OPINION OF QUALIFIED EXPERTS. THE DATA IS MEANT AS A GUIDE TO THE OVERALL CLASSIFICATION OF THE PRODUCT AND IS NOT PACKAGE SIZE SPECIFIC, NOR SHOULD IT BE TAKEN AS A WARRANTY OR REPRESENTATION FOR WHICH THE COMPANY ASSUMES LEGAL RESPONSIBILITY.=== THE INFORMATION IS OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION. ANY USE OF THE INFORMATION MUST BE DETERMINED BY THE USER TO BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. SEE SHIPPER REQUIREMENTS 49CFR 171.2, CERTIFICATION 172.204, AND EMPLOYEE TRAINING 49 CFR 173.1(B).

U.S. CUSTOMS HARMONIZATION NUMBER: 29163220007

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NOTE: WHEN HANDLING LIQUID PRODUCTS, SECONDARY PROTECTIVE CONTAINERS MUST BE USED FOR CARRYING.

-N/A = NOT APPLICABLE, OR NOT AVAILABLE;

N/E = NOT ESTABLISHED.-

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET MEETS THE REQUIREMENTS OF THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ACT AND REGULATIONS PROMULGATED THEREUNDER (29 CFR 1910.1200 ET. SEQ.) AND THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PERSON TRAINED IN, OR SUPERVISED BY A PERSON TRAINED IN, CHEMICAL HANDLING. THE USER IS RESPONSIBLE FOR DETERMINING THE PRECAUTIONS AND DANGERS OF THIS CHEMICAL FOR HIS OR HER PARTICULAR APPLICATION. DEPENDING ON USAGE, PROTECTIVE CLOTHING INCLUDING EYE AND FACE GUARDS AND RESPIRATORS MUST BE USED TO AVOID CONTACT WITH MATERIAL OR BREATHING CHEMICAL VAPORS/FUMES.

EXPOSURE TO THIS PRODUCT MAY HAVE SERIOUS ADVERSE HEALTH EFFECTS. THIS CHEMICAL MAY INTERACT WITH OTHER SUBSTANCES. SINCE THE POTENTIAL USES

CONTINUED ON PAGE: 8

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ARE SO VARIED, BAKER CANNOT WARN OF ALL OF THE POTENTIAL DANGERS OF USE OR INTERACTION WITH OTHER CHEMICALS OR MATERIALS. BAKER WARRANTS THAT THE CHEMICAL MEETS THE SPECIFICATIONS SET FORTH ON THE LABEL.

BAKER DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE.

THE USER SHOULD RECOGNIZE THAT THIS PRODUCT CAN CAUSE SEVERE INJURY AND EVEN DEATH, ESPECIALLY IF IMPROPERLY HANDLED OR THE KNOWN DANGERS OF USE ARE NOT HEEDDED. READ ALL PRECAUTIONARY INFORMATION. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, BAKER WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET.

NOTE: CHEMTREC, CANUTEC, AND NATIONAL RESPONSE CENTER EMERGENCY TELEPHONE NUMBERS ARE TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS. ALL NON-EMERGENCY QUESTIONS SHOULD BE DIRECTED TO CUSTOMER SERVICE (1-800-JTBAKER) FOR ASSISTANCE.

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APPROVED BY QUALITY ASSURANCE DEPARTMENT.