

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

C2475 -05

CHLOROBENZENE

PAGE: 1

EFFECTIVE: 01/04/94

ISSUED: 01/15/94

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SECTION I - PRODUCT IDENTIFICATION

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PRODUCT NAME: CHLOROBENZENE
COMMON SYNONYMS: MONOCHLOROBENZENE; BENZENE CHLORIDE; CHLOROBENZOL; PHENYL
CHLORIDE
CHEMICAL FAMILY: CHLORINATED HYDROCARBONS
FORMULA: C6H5CL
FORMULA WT.: 112.56
CAS NO.: 108-90-7
NIOSH/RTECS NO.: CZ0175000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 9179

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PRECAUTIONARY LABELING

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BAKER SAF-T-DATA* SYSTEM

HEALTH	-	2	MODERATE
FLAMMABILITY	-	3	SEVERE (FLAMMABLE)
REACTIVITY	-	1	SLIGHT
CONTACT	-	2	MODERATE

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

U.S. PRECAUTIONARY LABELING

WARNING

FLAMMABLE. CAUSES SEVERE IRRITATION. HARMFUL IF SWALLOWED OR INHALED.
KEEP AWAY FROM HEAT, SPARKS, FLAME. AVOID CONTACT WITH EYES, SKIN, CLOTHING.
AVOID BREATHING VAPOR. KEEP IN TIGHTLY CLOSED CONTAINER. USE WITH ADEQUATE
VENTILATION. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, USE ALCOHOL
FOAM, DRY CHEMICAL, CARBON DIOXIDE - WATER MAY BE INEFFECTIVE. IN CASE OF
SPILL, SOAK UP WITH SAND OR EARTH. FLUSH SPILL AREA WITH WATER.

INTERNATIONAL LABELING

FLAMMABLE. HARMFUL BY INHALATION.
AVOID CONTACT WITH SKIN AND EYES.

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PRECAUTIONARY LABELING (CONTINUED)

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SAF-T-DATA* STORAGE COLOR CODE: RED (FLAMMABLE)

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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>
CHLOROBENZENE	108-90-7	90-100	75 PPM	75 PPM

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SECTION III - PHYSICAL DATA

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BOILING POINT: 132 C (269 F) (AT 760 MM HG)	VAPOR PRESSURE (MMHG): 11.8 (20 C)
MELTING POINT: -45 C (-49 F) (AT 760 MM HG)	VAPOR DENSITY (AIR=1): 3.9
SPECIFIC GRAVITY: 1.11 (H2O=1)	EVAPORATION RATE: 1.07 (BUTYL ACETATE = 1)
SOLUBILITY (H2O): NEGLIGIBLE (<0.1%)	% VOLATILES BY VOLUME: 100 (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 LIQUID. ALMOND ODOR.

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT (CLOSED CUP): 28 C (84 F)	NFPA 704M RATING: 2-3-0
AUTOIGNITION TEMPERATURE: 592 C (1099 F)	
FLAMMABLE LIMITS: UPPER - 7.1 %	LOWER - 1.3 %

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA (CONTINUED)

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FIRE EXTINGUISHING MEDIA

USE ALCOHOL FOAM, DRY CHEMICAL OR CARBON DIOXIDE. (WATER MAY BE INEFFECTIVE.)

SPECIAL FIRE-FIGHTING PROCEDURES

FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE. MOVE CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL.

UNUSUAL FIRE & EXPLOSION HAZARDS

VAPORS MAY FLOW ALONG SURFACES TO DISTANT IGNITION SOURCES AND FLASH BACK. CLOSED CONTAINERS EXPOSED TO HEAT MAY EXPLODE. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE.

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): 350 MG/M (75 PPM)

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): 350 MG/M (75 PPM)

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR CHLOROBENZENE

2910 MG/KG

CARCINOGENICITY: NTP: NO IARC: NO

Z LIST: NO OSHA REG: NO

CARCINOGENICITY

NONE IDENTIFIED.

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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REPRODUCTIVE EFFECTS

NONE IDENTIFIED.

EFFECTS OF OVEREXPOSURE

INHALATION: HEADACHE, NAUSEA, VOMITING, DIZZINESS, DROWSINESS,
IRRITATION OF UPPER RESPIRATORY TRACT, UNCONSCIOUSNESS

SKIN CONTACT: SEVERE IRRITATION OR BURNS, PROLONGED CONTACT MAY CAUSE
DERMATITIS

EYE CONTACT: SEVERE IRRITATION OR BURNS

SKIN ABSORPTION: NONE IDENTIFIED

INGESTION: HEADACHE, NAUSEA, VOMITING, DIZZINESS, GASTROINTESTINAL
IRRITATION

CHRONIC EFFECTS: DAMAGE TO LIVER, KIDNEYS, LUNGS, BLOOD, CENTRAL NERVOUS
SYSTEM

TARGET ORGANS

RESPIRATORY SYSTEM, LUNGS, EYES, SKIN, CENTRAL NERVOUS SYSTEM, LIVER,
KIDNEYS, BLOOD

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

NONE IDENTIFIED

PRIMARY ROUTES OF ENTRY

INHALATION, INGESTION, EYE CONTACT, SKIN 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.

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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 BENZENE, CHLORO- (RQ = 100 LBS)

SARA 313 TOXIC CHEMICALS: YES CONTAINS CHLOROBENZENE

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: HEAT, FLAME, OTHER SOURCES OF IGNITION

INCOMPATIBLES: STRONG OXIDIZING AGENTS

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

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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. USE WATER SPRAY TO REDUCE VAPORS. TAKE UP
WITH SAND OR OTHER NON-COMBUSTIBLE ABSORBENT MATERIAL AND PLACE INTO
CONTAINER FOR LATER DISPOSAL. FLUSH AREA WITH WATER.

J. T. BAKER SOLUSORB(R) SOLVENT ADSORBENT IS RECOMMENDED FOR SPILLS OF THIS
PRODUCT.

DISPOSAL PROCEDURE

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

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SECTION VII - SPILL & DISPOSAL PROCEDURES (CONTINUED)

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EPA HAZARDOUS WASTE NUMBER: U037 (TOXIC WASTE)

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SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

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VENTILATION: USE GENERAL OR LOCAL EXHAUST VENTILATION TO MEET TLV REQUIREMENTS.

RESPIRATORY PROTECTION: RESPIRATORY PROTECTION REQUIRED IF AIRBORNE CONCENTRATION EXCEEDS TLV. AT CONCENTRATIONS UP TO 1000 PPM, A CHEMICAL CARTRIDGE RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE IS RECOMMENDED. ABOVE THIS LEVEL, A SELF-CONTAINED BREATHING APPARATUS IS RECOMMENDED.

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

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SECTION IX - STORAGE AND HANDLING PRECAUTIONS

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SAF-T-DATA* STORAGE COLOR CODE: RED (FLAMMABLE)

STORAGE REQUIREMENTS

KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL, DRY, WELL-VENTILATED, FLAMMABLE LIQUID STORAGE AREA.

SPECIAL PRECAUTIONS

BOND AND GROUND CONTAINERS WHEN TRANSFERRING LIQUID.

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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: CHLOROBENZENE

HAZARD CLASS: 3

UN/NA: UN1134 REPORTABLE QUANTITY: 100 LBS. PACKAGING GROUP: III

LABELS: 3 FLAMMABLE LIQUID

REGULATORY REFERENCES: 49CFR 172.101

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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION (CONTINUED)

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INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: CHLOROBENZENE

HAZARD CLASS: 3.3

UN: UN1134 MARINE POLLUTANTS: NO

LABELS: FLAMMABLE LIQUID

REGULATORY REFERENCES: 49CFR PART 176; IMDG CODE

I.M.O. PAGE: 3318

PACKAGING GROUP: III

AIR (I.C.A.O.)

PROPER SHIPPING NAME: CHLOROBENZENE

HAZARD CLASS: 3

UN: UN1134

LABELS: FLAMMABLE LIQUID

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).

PACKAGING GROUP: III

U.S. CUSTOMS HARMONIZATION NUMBER: 29036110008

EPA/TSCA EXPORT NOTIFICATION

YES

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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 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.

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