

JUN 11 1990

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 -- (201) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

P0737 M04
EFFECTIVE: 09/25/89

PENTANE

PAGE: 1
ISSUED: 01/06/90

J.T.BAKER INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865

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SECTION I - PRODUCT IDENTIFICATION
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PRODUCT NAME: PENTANE
COMMON SYNONYMS: AMYL HYDRIDE
CHEMICAL FAMILY: ALIPHATIC HYDROCARBONS
FORMULA: CH3(CH2)3CH3
FORMULA WT.: 72.15
CAS NO.: 109-66-0
NIOSH/RTECS NO.: RZ9450000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: T007,9331,9333,9129,9340

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PRECAUTIONARY LABELING
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BAKER SAF-T-DATA* SYSTEM

HEALTH	-	1	SLIGHT
FLAMMABILITY	-	4	EXTREME (FLAMMABLE)
REACTIVITY	-	0	NONE
CONTACT	-	1	SLIGHT

LABORATORY PROTECTIVE EQUIPMENT

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

U.S. PRECAUTIONARY LABELING

DANGER

HARMFUL IF INHALED. EXTREMELY FLAMMABLE.
KEEP AWAY FROM HEAT, SPARKS, FLAME. 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. FLUSH SPILL AREA WITH WATER SPRAY.

INTERNATIONAL LABELING

HIGHLY FLAMMABLE.
KEEP CONTAINER IN A WELL-VENTILATED PLACE. KEEP AWAY FROM SOURCES OF IGNITION
- NO SMOKING. DO NOT EMPTY INTO DRAINS. TAKE PRECAUTIONARY MEASURES AGAINST
STATIC DISCHARGES.

CONTINUED ON PAGE: 2

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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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COMPONENT	CAS NO.	WEIGHT %	OSHA/PEL	ACGIH/TLV
PENTANE	109-66-0	90-100	600 PPM	600 PPM

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SECTION III - PHYSICAL DATA

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BOILING POINT: 36 C (96 F)
(AT 760 MM HG)

VAPOR PRESSURE (MMHG): 425
(20 C)

MELTING POINT: -130 C (-202 F)
(AT 760 MM HG)

VAPOR DENSITY (AIR=1): 2.5

SPECIFIC GRAVITY: 0.63
(H2O=1)

EVAPORATION RATE: 28.6
(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. FAINT ODOR.

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT (CLOSED CUP): -49 C (-57 F)

NFPA 704M RATING: 1-4-0

AUTOIGNITION TEMPERATURE: 259 C (500 F)

FLAMMABLE LIMITS: UPPER - 7.8 % LOWER - 1.4 %

CONTINUED ON PAGE: 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
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): 1800 MG/M3 (600 PPM)

SHORT-TERM EXPOSURE LIMIT (STEL): 2210 MG/M3 (750 PPM)

PERMISSIBLE EXPOSURE LIMIT (PEL): 1800 MG/M3 (600 PPM)

TOXICITY OF COMPONENTS

INTRAVENOUS MOUSE LD50 FOR PENTANE 446 MG/KG
CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

CARCINOGENICITY
NONE IDENTIFIED.

CONTINUED ON PAGE: 4

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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,
EXCESSIVE INHALATION MAY CAUSE CENTRAL NERVOUS SYSTEM
DEPRESSION

SKIN CONTACT: PROLONGED CONTACT MAY CAUSE DERMATITIS

EYE CONTACT: IRRITATION

SKIN ABSORPTION: NONE IDENTIFIED

INGESTION: NONE IDENTIFIED

CHRONIC EFFECTS: NONE IDENTIFIED

TARGET ORGANS
EYES, SKIN, RESPIRATORY SYSTEM

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.

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, FLUSH SKIN WITH WATER.

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

CONTINUED ON PAGE: 5

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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SARA/TITLE III HAZARD CATEGORIES AND LISTS

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

EXTREMELY HAZARDOUS SUBSTANCE: NO
CERCLA HAZARDOUS SUBSTANCE: NO
SARA 313 TOXIC CHEMICALS: NO
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
COMPATIBLES: STRONG OXIDIZING AGENTS
DECOMPOSITION PRODUCTS: 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 SUITABLE 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.

EPA HAZARDOUS WASTE NUMBER: D001 (IGNITABLE WASTE)

CONTINUED ON PAGE: 6

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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 5000 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, UNIFORM, APRON, NEOPRENE 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: PENTANE
HAZARD CLASS: FLAMMABLE LIQUID
UN/NA: UN1265
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.101; 173.119

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: PENTANES
HAZARD CLASS: 3.1
UN: UN1265 MARINE POLLUTANTS: NO
LABELS: FLAMMABLE LIQUID

I.M.O. PAGE: 3044-3
PACKAGING GROUP: I

CONTINUED ON PAGE: 7

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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION (CONTINUED)
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REGULATORY REFERENCES: 49CFR 172.102; PART 176; IMD

AIR (I.C.A.O.)

PROPER SHIPPING NAME: PENTANES
HAZARD CLASS: 3.1
UN: UN1265

PACKAGING GROUP: I

LABELS: FLAMMABLE LIQUID

REGULATORY REFERENCES: 49CFR 172.101; 173.6; PART 175; ICAO/IATA

U.S. CUSTOMS HARMONIZATION NUMBER: 29011060001

=====
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 HEEDED. READ ALL PRECAUTIONARY INFORMATION. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, BAKER WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET. IF YOU HAVE ANY QUESTIONS, PLEASE CALL CUSTOMER SERVICE (1-800-JTBAKER) FOR ASSISTANCE.

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CONTINUED ON PAGE: 8

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APPROVED BY QUALITY ASSURANCE DEPARTMENT.

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