

P.O. 69760

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

M4628 D05
EFFECTIVE: 05/01/89

METHYL ETHYL KETONE

PAGE: 1
ISSUED: 05/16/89

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SECTION I - PRODUCT IDENTIFICATION

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PRODUCT NAME: METHYL ETHYL KETONE
COMMON SYNONYMS: 2-BUTANONE; MEK; ETHYL METHYL KETONE; METHYL ACETONE
CHEMICAL FAMILY: KETONES
FORMULA: CH₃COCH₂CH₃
FORMULA WT.: 72.11
CAS NO.: 78-93-3
NIOSH/RTECS NO.: EL6475000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 5385,9214,9211,9323,Q531,9319

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PRECAUTIONARY LABELING

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BAKER SAF-T-DATA* SYSTEM

HEALTH	-	2	MODERATE
FLAMMABILITY	-	4	EXTREME (FLAMMABLE)
REACTIVITY	-	2	MODERATE
CONTACT	-	2	MODERATE

LABORATORY PROTECTIVE EQUIPMENT

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

U.S. PRECAUTIONARY LABELING

DANGER

CAUSES IRRITATION. EXTREMELY FLAMMABLE. HARMFUL IF SWALLOWED OR INHALED.
LABORATORY TEST RESULTS INDICATE MATERIAL MAY BE TERATOGENIC.
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

HIGHLY FLAMMABLE.

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PRECAUTIONARY LABELING (CONTINUED)

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KEEP CONTAINER IN A WELL-VENTILATED PLACE. KEEP AWAY FROM SOURCES OF IGNITION
- NO SMOKING. DO NOT BREATHE VAPOUR. TAKE PRECAUTIONARY MEASURES AGAINST
STATIC DISCHARGES.

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
METHYL ETHYL KETONE	78-93-3	99-100	200 PPM	200 PPM

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SECTION III - PHYSICAL DATA

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BOILING POINT: 80 C (176 F)
(AT 760 MM HG)

VAPOR PRESSURE (MMHG): 78
(20 C)

MELTING POINT: -87 C (-124 F)
(AT 760 MM HG)

VAPOR DENSITY (AIR=1): 2.5

SPECIFIC GRAVITY: 0.81
(H2O=1)

EVAPORATION RATE: 5.7
(BUTYL ACETATE = 1)

SOLUBILITY(H2O): APPRECIABLE (>10%)

% 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. KETONE-LIKE ODOR.

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT (CLOSED CUP): -6 C (20 F) NFPA 704M RATING: 1-3-0

AUTOIGNITION TEMPERATURE: 403 C (759 F)

FLAMMABLE LIMITS: UPPER - 11.4 % LOWER - 1.8 %

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): 590 MG/M3 (200 PPM)

SHORT-TERM EXPOSURE LIMIT (STEL): 885 MG/M3 (300 PPM)

PERMISSIBLE EXPOSURE LIMIT (PEL): 590 MG/M3 (200 PPM)

TOXICITY OF COMPONENTS

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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ORAL RAT LD50 FOR METHYL ETHYL KETONE	2737 MG/KG
INTRAPERITONEAL MOUSE LD50 FOR METHYL ETHYL KETONE	616 MG/KG
SKIN RABBIT LD50 FOR METHYL ETHYL KETONE	13 G/KG
CARCINOGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO	

CARCINOGENICITY
NONE IDENTIFIED.

REPRODUCTIVE EFFECTS
TESTS ON LABORATORY ANIMALS INDICATE MATERIAL MAY BE TERATOGENIC.

EFFECTS OF OVEREXPOSURE

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

SKIN CONTACT: IRRITATION, PROLONGED CONTACT MAY CAUSE DERMATITIS

EYE CONTACT: IRRITATION, MAY CAUSE TEMPORARY CORNEAL DAMAGE

SKIN ABSORPTION: NONE IDENTIFIED

INGESTION: HEADACHE, NAUSEA, VOMITING, DIZZINESS, GASTROINTESTINAL
IRRITATION, CENTRAL NERVOUS SYSTEM DEPRESSION

CHRONIC EFFECTS: CENTRAL NERVOUS SYSTEM DEPRESSION

TARGET ORGANS
NASAL SEPTUM, LUNGS, EYES, SKIN, MUCOUS MEMBRANES, IN ANIMALS: LIVER,
KIDNEYS, LUNGS, SPLEEN, BRAIN

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
RESPIRATORY SYSTEM DISEASE, SKIN DISORDERS

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

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

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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.

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

TOXIC CHEMICALS: YES CONTAINS METHYL ETHYL KETONE
GENERIC CLASS: C02

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, STRONG BASES, CAUSTICS,
MINERAL ACIDS, AMINES AND AMMONIA, HALOGENS, PLASTICS,
RUBBER

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 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.

EPA HAZARDOUS WASTE NUMBER: U159 (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, UNIFORM, APRON, BUTYL 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 (FLAMMABLE)

STORAGE REQUIREMENTS

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

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SECTION IX - STORAGE AND HANDLING PRECAUTIONS (CONTINUED)

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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: METHYL ETHYL KETONE
HAZARD CLASS: FLAMMABLE LIQUID
UN/NA: UN1193 REPORTABLE QUANTITY: 5000 LBS.
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.101; 173.119

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: METHYL ETHYL KETONE
HAZARD CLASS: 3.2
UN: UN1193 MARINE POLLUTANTS: NO
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.102; PART 176; IMO

I.M.O. PAGE: 3080
PACKAGING GROUP: II

AIR (I.C.A.O.)

PROPER SHIPPING NAME: METHYL ETHYL KETONE
HAZARD CLASS: 3.2
UN: UN1193
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.101; 173.6; PART 175; ICAO/IATA

PACKAGING GROUP: II

U.S. CUSTOMS HARMONIZATION NUMBER: 29141200007

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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
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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. IF YOU HAVE ANY QUESTIONS, PLEASE CALL CUSTOMER SERVICE (1-800-JTBAKER) FOR ASSISTANCE.

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APPROVED BY QUALITY ASSURANCE DEPARTMENT.

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