

A2028 -07
EFFECTIVE: 03/09/92

ALCOHOL, ANHYDROUS

PAGE: 1
ISSUED: 03/28/92

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: ALCOHOL, ANHYDROUS
COMMON SYNONYMS: ETHANOL; ETHYL ALCOHOL
CHEMICAL FAMILY: ALCOHOLS
FORMULA: MIXTURE (C2H5OH + C3H7OH + CH3OH)
FORMULA WT.: N/A
CAS NO.: N/A
NIDSH/RTECS NO.: KQ6300000
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 9229,9401,9400,A478,5128

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PRECAUTIONARY LABELING
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BAKER SAF-T-DATA* SYSTEM

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

LABORATORY PROTECTIVE EQUIPMENT

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

U.S. PRECAUTIONARY LABELING

POISON DANGER

EXTREMELY FLAMMABLE. HARMFUL IF INHALED. CAUSES IRRITATION. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. CAN NOT BE MADE NON-POISONOUS. CAUTION: CONTAINS METHANOL. NOT FOR INTERNAL USE. EXCEPTIONAL HEALTH HAZARD: READ MATERIAL SAFETY DATA SHEET.
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. KEEP CONTAINERS OUT OF SUN AND AWAY FROM HEAT. 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.

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PRECAUTIONARY LABELING (CONTINUED)

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INTERNATIONAL LABELING

AVOID CONTACT WITH EYES. AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF WATER. KEEP CONTAINER TIGHTLY CLOSED.

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
ETHANOL	64-17-5	90-95	1000 PPM	1000 PPM
2-PROPANOL	67-63-0	1-5	400 PPM	400 PPM
METHANOL	67-56-1	1-5	200 PPM	200 PPM

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SECTION III - PHYSICAL DATA

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BOILING POINT: 78 C (172 F)
(AT 760 MM HG)

VAPOR PRESSURE (MMHG): 44
(20 C)

MELTING POINT: -114 C (-173 F)
(AT 760 MM HG)

VAPOR DENSITY (AIR=1): 1.6

SPECIFIC GRAVITY: 0.79
(H2O=1)

EVAPORATION RATE: 2.7
(BUTYL ACETATE = 1)

SOLUBILITY(H2O): COMPLETE (100%)

% VOLATILES BY VOLUME: 100
(21 C)

PH: N/A

ODOR THRESHOLD (P.P.M.): 1000

PHYSICAL STATE: LIQUID

COEFFICIENT WATER/OIL DISTRIBUTION: N/A

APPEARANCE & ODOR: CLEAR, COLORLESS LIQUID. PLEASANT ODOR.

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA
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FLASH POINT (CLOSED CUP): 12 C (55 F) NFPA 704M RATING: 0-3-0

AUTOIGNITION TEMPERATURE: 362 C (685 F)

FLAMMABLE LIMITS: UPPER - 19.0 % LOWER - 3.3 %

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): 1900 MG/M3 (1000 PPM)

TLV IS FOR ETHYL ALCOHOL.

SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED

PERMISSIBLE EXPOSURE LIMIT (PEL): 1900 MG/M3 (1000 PPM)

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR ETHANOL	7060 MG/KG
INTRAPERITONEAL RAT LD50 FOR ETHANOL	4070 MG/KG
INTRAVENOUS RAT LD50 FOR ETHANOL	1440 MG/KG
INHALATION-4HR MOUSE LC50 FOR ETHANOL	39 G/M3
ORAL RAT LD50 FOR 2-PROPANOL	5840 MG/KG
INTRAPERITONEAL MOUSE LD50 FOR 2-PROPANOL	933 MG/KG
ORAL DOG LD50 FOR 2-PROPANOL	6150 MG/KG
SKIN RABBIT LD50 FOR 2-PROPANOL	13 G/KG
ORAL RAT LD50 FOR METHANOL	5628 MG/KG
INTRAPERITONEAL RAT LD50 FOR METHANOL	9540 MG/KG
SUBCUTANEOUS MOUSE LD50 FOR METHANOL	9800 MG/KG
SKIN RABBIT LD50 FOR METHANOL	20 G/KG

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

CARCINOGENICITY

ETHANOL HAS BEEN LINKED TO CANCER IN HUMANS.

REPRODUCTIVE EFFECTS

ETHYL ALCOHOL HAS BEEN LINKED TO BIRTH DEFECTS IN HUMANS.

EFFECTS OF OVEREXPOSURE

- INHALATION: HEADACHE, NAUSEA, VOMITING, DIZZINESS, DROWSINESS, IRRITATION OF UPPER RESPIRATORY TRACT, UNCONSCIOUSNESS, IRRITATION OF MUCOUS MEMBRANES
- SKIN CONTACT: IRRITATION, PROLONGED CONTACT MAY CAUSE DERMATITIS
- EYE CONTACT: IRRITATION
- SKIN ABSORPTION: NONE IDENTIFIED
- INGESTION: HEADACHE, NAUSEA, VOMITING, DIZZINESS, GASTROINTESTINAL IRRITATION, RESPIRATORY FAILURE, CENTRAL NERVOUS SYSTEM DEPRESSION, CONVULSIONS, UNCONSCIOUSNESS, BLINDNESS, AND MAY BE FATAL
- CHRONIC EFFECTS: DAMAGE TO LIVER, KIDNEYS, EYES, LUNGS, CENTRAL NERVOUS SYSTEM, BRAIN, SPLEEN, BLOOD

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SECTION V - HEALTH HAZARD DATA (CONTINUED)
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TARGET ORGANS

RESPIRATORY SYSTEM, LUNGS, KIDNEYS, LIVER, BLOOD, EYES, SKIN, CENTRAL
NERVOUS SYSTEM, BRAIN, SPLEEN, HEART, STOMACH, GI TRACT

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

LIVER DISORDERS, SKIN DISORDERS, CHRONIC IRRITATION OF MUCOUS MEMBRANES

PRIMARY ROUTES OF ENTRY

INGESTION, INHALATION, SKIN CONTACT, EYE CONTACT, ABSORPTION

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: CALL A PHYSICIAN. IF SWALLOWED, IF CONSCIOUS, GIVE LARGE
AMOUNTS OF WATER. 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.

MEDICAL SURVEILLANCE

PROVIDE PERIODIC MEDICAL EXAMINATIONS WITH EMPHASIS ON LUNGS, SKIN,
RESPIRATORY SYSTEM, AND LIVER.

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 METHANOL (RQ = 5000 LBS)

SARA 313 TOXIC CHEMICALS: YES CONTAINS ISOPROPYL ALCOHOL AND METHANOL
GENERIC CLASS: CO5

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, SUNLIGHT,
ULTRAVIOLET LIGHT

INCOMPATIBLES: STRONG OXIDIZING AGENTS, ALUMINUM, ALKALI METALS,
ACETYL CHLORIDE, STRONG ACIDS, ACID CHLORIDES, ACID
ANHYDRIDES, STRONG REDUCING 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 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: D001 (IGNITABLE 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: NONE REQUIRED WHERE ADEQUATE VENTILATION CONDITIONS
EXIST. IF AIRBORNE CONCENTRATION IS HIGH, A CHEMICAL
CARTRIDGE RESPIRATOR WITH ORGANIC VAPOR CARTRIDGE IS
RECOMMENDED. IF CONCENTRATION EXCEEDS CAPACITY OF
CARTRIDGE RESPIRATOR, A SELF-CONTAINED BREATHING
APPARATUS IS ADVISED.

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SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT (CONTINUED)

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EYE/SKIN PROTECTION: SAFETY GOGGLES AND FACE SHIELD, UNIFORM, PROTECTIVE
SUIT, 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 OR CABINET.

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: ETHANOL, MIXTURE
HAZARD CLASS: 3.2
UN/NA: UN1170
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.101

PACKAGING GROUP: II

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: ETHANOL, MIXTURE
HAZARD CLASS: 3.2
UN: UN1170 MARINE POLLUTANTS: NO
LABELS: FLAMMABLE LIQUID
REGULATORY REFERENCES: 49CFR 172.102; PART 176; IMO

I.M.O. PAGE: 3219
PACKAGING GROUP: II

AIR (I.C.A.O.)

PROPER SHIPPING NAME: ETHANOL, MIXTURE
HAZARD CLASS: 3.2
UN: UN1170
LABELS: FLAMMABLE LIQUID

PACKAGING GROUP: II

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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

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REGULATORY REFERENCES: 49CFR 172.101; 173.6; PART 175; ICAO/IATA=== 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 172.3 AND EMPLOYEE TRAINING 49CFR 173.1.

U.S. CUSTOMS HARMONIZATION NUMBER: 22072000003

=====
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

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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.

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