

NOSB NATIONAL LIST FILE CHECKLIST

LIVESTOCK

MATERIAL NAME: #1 Alcohol



NOSB Database Form



References



MSDS (or equivalent)



FASP (FDA)



TAP Reviews from: John Clark, Marta Engel

**NOSB/NATIONAL LIST
COMMENT FORM
LIVESTOCK**

Material Name: #1 Alcohol

Please use this page to write down comments, questions, and your anticipated vote(s).

COMMENTS/QUESTIONS:

1. In my opinion, this material is:
_____ Synthetic _____ Non-synthetic.

2. This material should be placed on the proposed National List as:
_____ Prohibited Natural _____ Allowed Synthetic.

TAP REVIEWER COMMENT FORM for USDA/NOSB

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Complete both sides of page. Attach additional sheets if you wish.

This file is due back to us by: Sept 19, 1995

Name of Material: Alcohol

Reviewer Name: John Bell Clark, Ph.D.

Is this substance Synthetic or non-synthetic? Explain (if appropriate)

Synthetic

If synthetic, how is the material made? (please answer here if our database form is blank)

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, Non-synthetic (This material does not belong on National List)

Are there any use restrictions or limitations that should be placed on this material on the National List?

Only natural ethanol should be allowed - there are many sources, including organically derived ethanol.

Please comment on the accuracy of the information in the file:

I am sure that the petitioner did not mean for the horrible synthetic mix you have settled on was the material to be reviewed. What you have

Any additional comments? (attachments welcomed)

presented is denatured alcohol. What should be reviewed is synthetic ethanol, period. No one wants methanol or isopropanol on the national list. These are toxic substances having no place in

Do you have a commercial interest in this material? Yes; No

Signature John Bell Clark

Date 9-13-95

organic
alcohol

**Please address the 7 criteria in the Organic Foods Production Act:
(comment in those areas you feel are applicable)**

(1) the potential of such substances for detrimental chemical interactions with other materials used in organic farming systems;

(2) the toxicity and mode of action of the substance and of its breakdown products or any contaminants, and their persistence and areas of concentration in the environment;

Methanol & ~~isopropanol~~ isopropanol accumulate in ground water

(3) the probability of environmental contamination during manufacture, use, misuse or disposal of such substance;

see (2)

(4) the effect of the substance on human health;

both methanol & isopropanol are human toxicants

(5) the effects of the substance on biological and chemical interactions in the agroecosystem, including the physiological effects of the substance on soil organisms (including the salt index and solubility of the soil), crops and livestock;

Kills soil organisms, beneficial insects

(6) the alternatives to using the substance in terms of practices or other available materials; and

pure ethanol, grain alcohol, distilled from fermented sugars, only certified organic feedstuffs should be used for extractive feed additive or medicinal use in organic practices

(7) its compatibility with a system of sustainable agriculture.

not the synthetic varieties

USDA/TAP REVIEWER COMMENT FORM

Use this page or an equivalent to write down comments and summarize your evaluation regarding the data presented in the file of this potential National List material. Attach additional sheets if you wish.

This file is due back to us within 30 days of: Sept 22

Name of Material: ALCOHOL

Reviewer Name: MARTHA W. ENGEL, D.V.M.

Is this substance Natural or Synthetic? Explain (if appropriate)

It could be either as it can be distilled from natural or synthetic substances.

Please comment on the accuracy of the information in the file:

OK to the best of my knowledge

This material should be added to the National List as:

Synthetic Allowed Prohibited Natural

or, This material does not belong on the National List because:

Generally inert & biodegradable.

Are there any restrictions or limitations that should be placed on this material by use or application on the National List?

Any additional comments or references?

Signature Martha W. Engel, DVM Date 10/24/94

OFPA Criteria

2119(m)1:chem. inter. *none - biodegradable*

2119(m)2: toxicity *none - can be toxic if consumed by humans in large quantities*

2119(m)3:manufacture *Not expected to be a problem*

2119(m)4:humans (All toxicity data following is based on direct ingestion of alcohol by humans which would not be the case when used in crop production inputs.) Ethyl Alcohol has been linked to birth defects and cancer in humans. LD50(Oral-Rat)(MG/KG) - 7060; LD50(IPR-Rat)(MG/KG) - 4070; LD50(IV-Rat)(MG/KG) - 1440; LC50(Inhal- Mouse)(G/M3) - 39. Inhalation of vapors may cause headache, nausea, vomiting, dizziness, drowsiness, and loss of consciousness.

2119(m)5: biology *It is water soluble and biodegradable in the environment. It is usually used in small amounts so it shouldn't be a problem.*

2119(m)6:alternatives Humic acids (as carriers in some situations, microbial and enzymatic digestion (for extractant use only). Requiring natural source only may be alternative but it is often very difficult to determine source of alcohol.

2119(m)7:compatible *It shouldn't be a problem as it is water soluble & biodegradable.*

References

Identification

Common Name	Alcohol	Chemical Name	Alcohol, Anhydrous Reagent
Other Names	Ethanol, Isopropyl Alcohol, Methanol		
Code #: CAS	64-17-5 Ethanol	Code #: Other	NIOSH/RTECS: KQ6300000
N. L. Category	Synthetic Allowed	MSDS	yes

Chemistry

Family

Composition Mixture C₂H₅OH & C₃H₇OH & CH₃OH

Properties Clear, colorless liquid with pleasant odor. Completely soluble. Specific gravity 0.79, evaporation rate 3/1, boiling point 78 C. Versatility makes it a chemical intermediate for other organic chemicals.

How Made

Distillation from either natural or synthetic sources. Sulfite process consists of treating wood chips with calcium bisulfite at elevated temperatures and pressures. Then sulfur dioxide is stripped out and yeast is added to ferment sugars to ethyl alcohol. This is considered "natural" alcohol production, and is used with other fermentable sugars as well, such as molasses, grain or potatoes. Synthetic ethanol is produced from ethylene, either by the indirect hydration process or by direct hydration process. Synthetic production far exceeds fermentation production.

Use/Action

Type of Use Livestock

Use(s) Health Care. Disinfectants. Antiseptic, stomachic, solvent, sedative, feed additive. Ingredient in plant extracts. Used in extraction of other active ingredients. Can be used in liniments.

Action Oral use helps maintain a low oxidation-reduction potential in the rumen and aids rumen microflora metabolism.

Combinations

Status

OFPA

N. L. Restriction Category 1

EPA, FDA, etc

Safety Guidelines Flammable. Keep away from heat, sparks, flame. Avoid breathing vapor.

Directions

Registration

State Differences On California Proposition 65 list

Historical status approved unknowingly as carrier, extractant and inert.

International status

OFPA Criteria

2119(m)1: chemical interactions

2119(m)2: toxicity & persistence

Oxidizes readily to carbon dioxide and water in the body or the environment. Not a cumulative poison.

2119(m)3: manufacture & disposal consequences

Care must be taken to avoid exposing workers in manufacture to fumes. High flammability affects handling.

2119(m)4: effect on human health

(All toxicity data following is based on direct ingestion of alcohol by humans which would not be the case when used in livestock production.) Ethyl Alcohol has been linked to birth defects and cancer in humans when consumed. LD50(Oral-Rat)(MG/KG) - 7060; LD50(IPR-Rat)(MG/KG) - 4070; LD50(IV-Rat)(MG/KG) - 1440; LC50(Inhal-Mouse)(G/M3) - 39. Inhalation of vapors may cause headache, nausea, vomiting, dizziness, drowsiness, and loss of consciousness. Repeated exposure results in the development of a tolerance.

2119(m)5: agroecosystem biology

While high concentrations are toxic to soil organisms, the amount used as carriers or disinfectants is small and breaks down rapidly.

2119(m)6: alternatives to substance

Requiring natural source only may be alternative but it is often very difficult to determine source of alcohol.

2119(m)7: Is it compatible?

References

Kirk-Othmer Encyclopedia of Chemical Technology, 3rd. Ed., 1982. John Wiley & Sons, NY.

Rossoff, Irving S., Handbook of Veterinary Drugs, 1974. Springer Publishing Co., NY

West, Geoffrey P. ed., Black's Veterinary Dictionary, 16th edition, 1988. Barnes and Noble Books, Totoway, NJ.



SEP 27 1991

ETHYL ALCOHOL PRODUCTION

An outstanding example of the microbiological use of wood components may be found in the production of alcohol from spent sulfite liquor. For about 80 years, the sulfite alcohol industry has used as raw material the fermentable sugars formed when wood is digested to make sulfite pulp.

At Georgia-Pacific, the sulfite process consists of treating wood chips with an aqueous solution of calcium bisulfite at elevated temperatures and pressures. This treatment hydrolyzes some of the carbohydrates of wood into simple sugars, some of which are fermentable. Upon completion of the pulping process, the wood cellulose is separated from the cooking liquor, which is now called spent sulfite liquor. The liquor is then stripped of residual sulfur dioxide and neutralized. Yeast of the baker's variety, *saccharomyces cerevisiae*, is added to convert the fermentable sugars to ethyl alcohol, which is then distilled and purified.

The ethyl alcohol produced by this process is considered "natural," as opposed to synthetically produced alcohols such as those made from petroleum hydrocarbons, in that the basic raw material, trees, provides the simple sugars that are converted to the finished alcohol product by fermentation. This fermentation process is the same as that used to convert the sugars in other "natural" raw materials such as cane or beet sugar molasses, grain, or potatoes to ethyl alcohol. We at Georgia-Pacific have been producing ethyl alcohol by this method using a similar renewable resource for well over forty years and are extremely proud of the finished product.

Natural fermentation ethyl alcohol...made from trees.

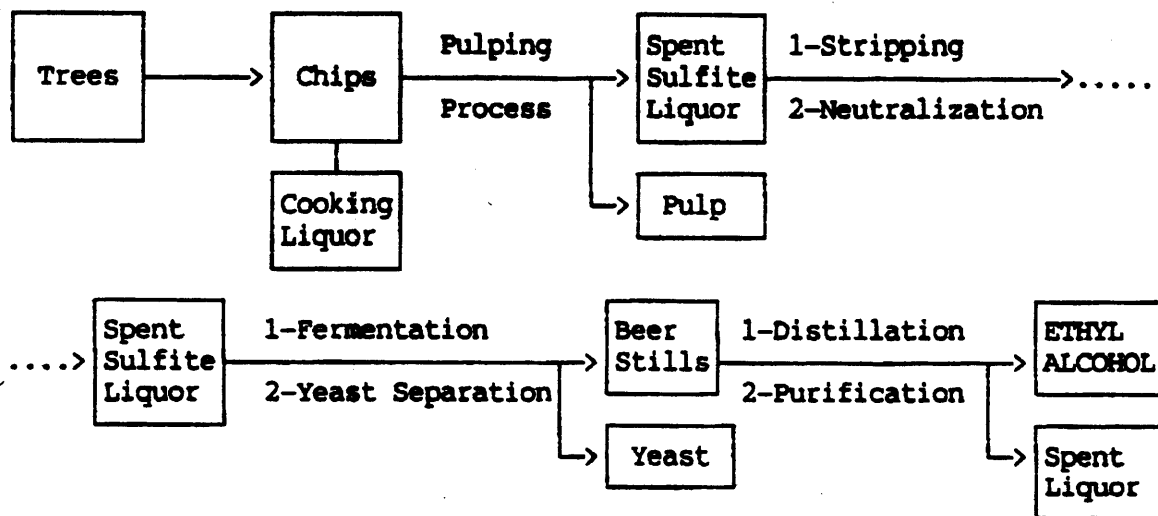


Diagram of Ethyl Alcohol Production

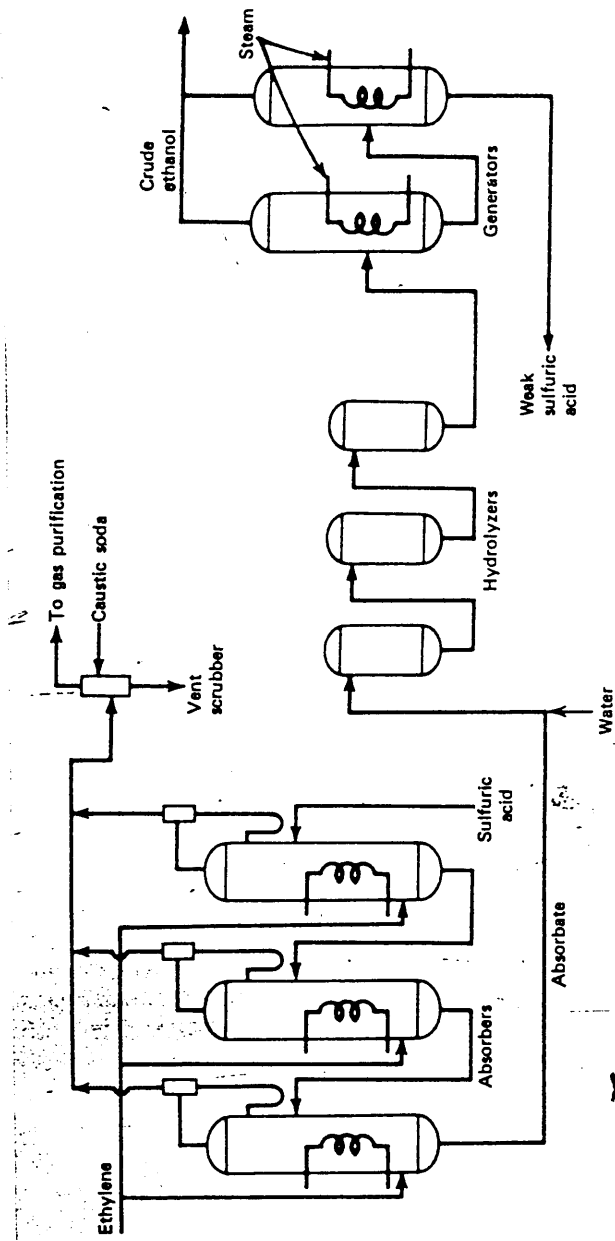


Figure 1. Manufacture of ethyl alcohol by esterification-hydrolysis (indirect hydration).

MSDS for ALCOHOL, ANHYDROUS, REAGENT

1 - PRODUCT IDENTIFICATION

PRODUCT NAME: ALCOHOL, ANHYDROUS, REAGENT
FORMULA: MIXTURE C₂H₅OH & C₃H₇OH & CH₃OH
FORMULA WT: .00
CAS NO.: - - NIOSH/RTECS NO.: KQ6300000
COMMON SYNONYMS: ETHANOL PRODUCT CODES: 9229,9401,A478,5128,9400
EFFECTIVE: 08/06/86 REVISION #03

PRECAUTIONARY LABELLING BAKER SAF-T-DATA(TM) SYSTEM

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

HAZARD RATINGS ARE 0 TO 4 (0 = NO HAZARD; 4 = EXTREME HAZARD).

LABORATORY PROTECTIVE EQUIPMENT

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

PRECAUTIONARY LABEL STATEMENTS

POISON DANGER FLAMMABLE - VAPOR HARMFUL
MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED
CANNOT BE MADE NON-POISONOUS
CAUTION - POISON - CONTAINS METHYL ALCOHOL. NOT FOR INTERNAL OR
EXTERNAL USE.

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

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

2 - HAZARDOUS COMPONENTS

COMPONENT	%	CAS NO.
ETHYL ALCOHOL	90-100	64-17-5
ISOPROPYL ALCOHOL	>1	67-63-0
METHYL ALCOHOL	>1	67-56-1

3 - PHYSICAL DATA

BOILING POINT: 78 C (172 F) VAPOR PRESSURE(MM HG): 44

MELTING POINT: -114 C (-173 F) VAPOR DENSITY(AIR=1): 1.6

SPECIFIC GRAVITY: 0.79 EVAPORATION RATE: 3.1
(H₂O=1) (BUTYL ACETATE=1)

SOLUBILITY(H₂O): COMPLETE (IN ALL PROPORTIONS) % VOLATILES BY VOLUME: 100

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

4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP): 13 C (55 F)

FLAMMABLE LIMITS: UPPER - 19.0 % LOWER - 3.3 %

FIRE EXTINGUISHING MEDIA

USE WATER SPRAY, ALCOHOL FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

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

5 - HEALTH HAZARD DATA

TLV AND PEL ARE BASED ON ABSOLUTE ETHANOL. ETHYL ALCOHOL HAS BEEN LINKED TO BIRTH DEFECTS AND CANCER IN HUMANS.

THRESHOLD LIMIT VALUE (TLV/TWA): 1900 MG/M³ (1000 PPM)

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

TOXICITY: LD₅₀ (ORAL-RAT)(MG/KG) - 7060
LD₅₀ (IPR-RAT)(MG/KG) - 4070
LD₅₀ (IV-RAT) (MG/KG) - 1440
LC₅₀ (INHAL-MOUSE) (G/M³) - 39

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

EFFECTS OF OVEREXPOSURE

INHALATION OF VAPORS MAY CAUSE HEADACHE, NAUSEA, VOMITING, DIZZINESS,

DROWSINESS, IRRITATION OF RESPIRATORY TRACT, AND LOSS OF CONSCIOUSNESS.
CONTACT MAY CAUSE IRRITATION OF SKIN, EYES, AND MUCOUS MEMBRANES.
PROLONGED EXPOSURE MAY CAUSE DERMATITIS.
INGESTION MAY CAUSE BLINDNESS.
INGESTION MAY CAUSE NAUSEA, VOMITING, HEADACHES, DIZZINESS,
GASTROINTESTINAL IRRITATION.
INGESTION MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION.

TARGET ORGANS: NONE IDENTIFIED

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE IDENTIFIED

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

EMERGENCY AND FIRST AID PROCEDURES

CALL A PHYSICIAN.

IF SWALLOWED, IF CONSCIOUS, GIVE LARGE AMOUNTS OF WATER. INDUCE VOMITING.

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

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

6 - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: HEAT, FLAME, OTHER SOURCES OF IGNITION,
SUNLIGHT AND ULTRAVIOLET LIGHT

INCOMPATIBLES: STRONG OXIDIZING AGENTS, ALUMINUM, ALKALI METALS,
ACETYL CHLORIDE

DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE

7 - SPILL AND DISPOSAL PROCEDURES

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)

8 - PROTECTIVE EQUIPMENT

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.

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

9 - STORAGE AND HANDLING PRECAUTIONS

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

SPECIAL PRECAUTIONS

BOND AND GROUND CONTAINERS WHEN TRANSFERRING LIQUID.
KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL, DRY, WELL-VENTILATED, FLAMMABLE LIQUID STORAGE AREA OR CABINET.

10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME ETHYL ALCOHOL
HAZARD CLASS FLAMMABLE LIQUID
UN/NA UN1170
LABELS FLAMMABLE LIQUID

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME ETHANOL
HAZARD CLASS 3.2
UN/NA UN1170
LABELS FLAMMABLE LIQUID

1 - PRODUCT IDENTIFICATION

PRODUCT NAME: ISOPROPYL ALCOHOL
FORMULA: CH₃CHOHCH₃ FORMULA WT: 60.10
CAS NO.: 67-63-0 NIOSH/RTECS NO.: NT805000
COMMON SYNONYMS: 2-PROPANOL; ISOPROPANOL; SEC-PROPYL ALCOHOL; IPA;
DIMETHYLCARBINOL
PRODUCT CODES: U298,5082,9080
EFFECTIVE: 09/03/86 REVISION #02

PRECAUTIONARY LABELLING BAKER SAF-T-DATA(TM) SYSTEM

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

HAZARD RATINGS ARE 0 TO 4 (0 = NO HAZARD; 4 = EXTREME HAZARD).

LABORATORY PROTECTIVE EQUIPMENT
SAFETY GLASSES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER

PRECAUTIONARY LABEL STATEMENTS

WARNING
FLAMMABLE
CAUSES 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.
FLUSH SPILL AREA WITH WATER SPRAY.

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

2 - HAZARDOUS COMPONENTS

COMPONENT	%	CAS NO.
ISOPROPYL ALCOHOL	90-100	67-63-0

3 - PHYSICAL DATA

BOILING POINT: 82 C (180 F) VAPOR PRESSURE(MM HG): 33

MELTING POINT: -89 C (-128 F) VAPOR DENSITY(AIR=1): 2.1

SPECIFIC GRAVITY: 0.79 EVAPORATION RATE: 2.83

(H₂O=1)

(BUTYL ACETATE=1)

SOLUBILITY(H₂O): COMPLETE (IN ALL PROPORTIONS) % VOLATILES BY VOLUME: 100

APPEARANCE & ODOR: COLORLESS LIQUID WITH SLIGHT ODOR OF RUBBING ALCOHOL.

4 - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (CLOSED CUP) 12 C (53 F) NFPA 704M RATING: 1-3-0

FLAMMABLE LIMITS: UPPER - 12.0 % LOWER - 2.0 %

FIRE EXTINGUISHING MEDIAUSE 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

5 - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV/TWA): 980 MG/M³ (400 PPM)SHORT-TERM EXPOSURE LIMIT (STEL): 1225 MG/M³ (500 PPM)PERMISSIBLE EXPOSURE LIMIT (PEL): 980 MG/M³ (400 PPM)TOXICITY: LD₅₀ (ORAL-RAT)(MG/KG) - 5045LD₅₀ (IPR-MOUSE)(MG/KG) - 933LD₅₀ (SKN-RABBIT) (G/KG) - 13LD₅₀ (IV-MOUSE) (MG/KG) - 1863

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

EFFECTS OF OVEREXPOSURE

INHALATION OF VAPORS MAY CAUSE HEADACHE, NAUSEA, VOMITING, DIZZINESS, DROWSINESS, IRRITATION OF RESPIRATORY TRACT, AND LOSS OF CONSCIOUSNESS.

INHALATION OF VAPORS MAY CAUSE PULMONARY EDEMA.

LIQUID MAY BE IRRITATING TO SKIN AND EYES. PROLONGED SKIN CONTACT MAY RESULT IN DERMATITIS. EYE CONTACT MAY RESULT IN TEMPORARY CORNEAL DAMAGE.

INGESTION MAY CAUSE NAUSEA, VOMITING, HEADACHES, DIZZINESS,
GASTROINTESTINAL IRRITATION.
INGESTION MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION.

TARGET ORGANS: EYES, SKIN, RESPIRATORY SYSTEM

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE IDENTIFIED

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

EMERGENCY AND FIRST AID PROCEDURES

CALL A PHYSICIAN.

IF SWALLOWED, DO NOT INDUCE VOMITING.

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

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

6 - REACTIVITY DATA

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: HEAT, FLAME, OTHER SOURCES OF IGNITION

INCOMPATIBLES: STRONG OXIDIZING AGENTS, ALUMINUM, NITRIC ACID,
 SULFURIC ACID, AMINES AND AMMONIA,
 HALOGEN ACIDS AND HALOGEN COMPOUNDS

DECOMPOSITION PRODUCTS: CARBON MONOXIDE, CARBON DIOXIDE

7 - SPILL AND DISPOSAL PROCEDURES

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)

8 - PROTECTIVE EQUIPMENT

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, NEOPRENE GLOVES ARE RECOMMENDED.

9 - STORAGE AND HANDLING PRECAUTIONS

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

SPECIAL PRECAUTIONS

BOND AND GROUND CONTAINERS WHEN TRANSFERRING LIQUID. KEEP CONTAINER TIGHTLY CLOSED. STORE IN A COOL, DRY, WELL-VENTILATED, FLAMMABLE LIQUID STORAGE AREA.

10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME ISOPROPANOL
HAZARD CLASS FLAMMABLE LIQUID
UN/NA UN1219
LABELS FLAMMABLE LIQUID

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME ISOPROPANOL
HAZARD CLASS 3.2
UN/NA UN1219
LABELS FLAMMABLE LIQUID