

NOSB NATIONAL LIST FILE CHECKLIST

LIVESTOCK

MATERIAL NAME: #1 Alcohol (methanol)



NOSB Database Form



References



MSDS (or equivalent)



TAP Reviews from: David Pimentel

**NOSB/NATIONAL LIST
COMMENT FORM
LIVESTOCK**

Material Name: #1 Alcohol (methanol)

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: Aug. 5, 1996

Name of Material: Alcohol (methanol)

Reviewer Name: David Pimentel

RECEIVED JUL 25 1996

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

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?

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

Any additional comments? (attachments welcomed)

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

Signature David Pimentel Date 7/11/96

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;

Should be minimal problems.

- (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;

Some of the breakdown products include alcohols and aldehydes and these can be toxic to plants and animals

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

See above

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

Some alcohols and aldehydes are toxic and carcinogens.

- (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;
-

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

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

Compatible in some situations.

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	<input checked="" type="radio"/> yes <input type="radio"/> no

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.

Type of Use Crops

Use/Action

Specific Use(s) Solvents and carriers in brand name products with allowed active ingredients. Disinfectants. Ingredient in plant extracts. Used in extraction of other active ingredients.

Action

Combinations

Status

OFPA

N. L. Restriction
EPA, FDA, etc

Directions

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

Historical status

International status

NOSB Materials Database

OFPA Criteria

2

2119(m)1: chemical interactions

2119(m)2: toxicity & persistence

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 crop production inputs.) 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

2119(m)6: alternatives to substance

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: Is it compatible?

References

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

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