

SAFETY DATA SHEET (SDS)

ETHY-GEN® II RIPENING CONCENTRATE

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Section 1: Product and Company Identification

PRODUCT NAME: Ethy-Gen® II Concentrate

RECOMMENDED USE: In a Catalytic Generator for Fruit Ripening, Tobacco and Citrus Degreening. For Industry Use Only in Commercial Ripening Rooms.

SUPPLIER DETAILS: Catalytic Generators LLC
1185 Pineridge Road
Norfolk, VA 23502-2095 U.S.A.
Phone: (757) 855-0191 / info@catalyticgenerators.com

EMERGENCY CONTACT: CHEMTREC: 1-800-424-9300 (USA) or +1-703-527-3887

Section 2: Hazards Identification

CLASSIFICATIONS: Highly flammable liquid and vapor: Category 2, H225
Eye irritant: Category 2A, H319
Specific target organ toxicity – single exposure: Category 3

TARGET ORGANS: Central nervous system, Heart, Liver

PICTOGRAMS:



SIGNAL WORD: Danger! (see note Section 15, page 9)

HAZARD STATEMENTS:

H225 Highly flammable liquid and vapor
H315 + H320 Causes irritation to eyes, skin
H335 May cause respiratory irritation

PRECAUTIONARY STATEMENTS:

P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical, ventilating, lighting, equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash skin thoroughly after handling.

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P280	Wear protective gloves, eye protection, face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents and container to an approved waste disposal plant.

Section 3: Hazards Identification

Mixture

Component	CAS No.	Reach Registered?	Concentration
Ethanol	64-17-5	YES	90%
2-Propanol	67-63-0	YES	5-10%
*Other components withheld as a trade secret/confidential business information			

Section 4: First Aid Measures

IF INHALED:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
IF INGESTED:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
IF IN EYES:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
IF ON SKIN:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
SPECIAL TREATMENT:	As described above and in sections 2 and 11. Prolonged or frequently repeated skin contact may cause allergic reaction in some individuals.

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Section 5: Firefighting Measures

SUITABLE EXTINGUISHING MEDIA

Alcohol-resistant foam, water spray, or carbon dioxide (CO₂). For small fires only, dry chemical powder, carbon dioxide, sand or earth may be used.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Highly flammable liquid and vapor. Vapors may form explosive mixture with air. During a fire, carbon monoxide (CO) is expected to be the primary hazard.

ADVICE FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing.

FIRE FIGHTING EQUIPMENT/INSTRUCTIONS

In case of fire do not breathe fumes. Move containers from fire area if you can do so. Otherwise use water spray to cool unopened containers.

Section 6: Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Allow trained and properly equipped personnel only. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all ignition sources. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Local authorities should be advised if significant spillages cannot be contained. Use personal protective equipment (see Section 8).

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Stop the flow of the material if this is without risk. If necessary and possible, dike the spilled material. Soak up product onto a compatible absorbent material like vermiculite sand or earth; then handle as a flammable material. Containerize spill cleanup materials to prevent release of vapors and prevent contact with heat, sparks, open flames, and oxidizing materials.

ENVIRONMENTAL CONSIDERATIONS

Avoid release to the environment. Do not let product enter drains, water courses or ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

Section 7: Handling and Storage

PRECAUTIONS FOR SAFE HANDLING

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use general and local exhaust ventilation; electrical equipment should be grounded and conform to local electrical / fire code. Keep away from sources of ignition. No smoking. Protect from direct sunlight. Take measures to prevent the build up of electrostatic charge. For further precautions see Section 2.

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Note: this product is intended for use in a catalytic generator in an enclosed room of at least 1500 ft³ (43m³); the electrical equipment in this room should follow the local fire code.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in dry locked storage area, at temperatures below 125°F. Store out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10). Consult local fire codes for additional storage information. Electrical equipment should be grounded and conform to local electrical / fire code.

NOTE

The ethylene generated by the use of this product in a catalytic generator is a simple asphyxiant at high levels and is flammable. The Lower Explosive Limit of ethylene is 2.7% (27,000 ppm). Only 100-150 ppm are required for use in fruit ripening.

Section 8: Exposure controls/personal protection

OCCUPATIONAL EXPOSURE LIMITS

Component	CAS No.	Type	Limit Value	Basis	Notes
Ethanol	64-17-5	PEL	1000 ppm 1900 mg/m ³	OSHA	
Ethanol	64-17-5	STEL	1000 ppm	ACGIH	Upper Respiratory Tract irritation. Confirmed animal carcinogen with unknown relevance to humans
Ethanol	64-17-5	IDLH	3300 ppm	NIOSH	
2-Propanol	67-63-0	TWA	400 ppm 980 mg/m ³	OSHA	
2-Propanol	67-63-0	STEL	500 ppm 1225 mg/m ³	NIOSH	
2-Propanol	67-63-0	TWA	400 ppm 980 mg/m ³		
2-Propanol	67-63-0	STEL	400 ppm 984 mg/m ³	ACGIH	Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Not classifiable as a human carcinogen
2-Propanol	67-63-0	TWA	200 ppm 491 mg/m ³		
NOTE: The above limits are for the components of the liquid mixture Ethy-Gen II, not for the ethylene generated from it through a catalytic generator. Ethylene is a gas and has the following Occupational Exposure Limits:					
Ethylene	74-85-1	TLV	200 ppm	ACGIH	(8-hour exposure)

BIOLOGICAL EXPOSURE INDICIES

Component	CAS No.	Determinant	Specimen	Concentration	Basis
2-Propanol	67-63-0	Acetone	Urine	40 mg/l	ACGIH - BEI
Sampling Time: end of shift at end of workweek					

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EXPOSURE CONTROLS

Appropriate engineering controls

General room or local exhaust ventilation is usually required to meet exposure limit in storage area. Electrical equipment should be grounded and conform to local electrical / fire code. Provide eyewash station.

PERSONAL PROTECTIVE EQUIPMENT

Body Protection Handlers and users must wear long-sleeved shirt, long pants, shoes and socks.

Eye Protection Safety glasses with side shields

Respiratory protection When workers may be exposed to concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations When using do not smoke. Wash hands before eating, drinking, smoking.

Section 9: Physical and Chemical Properties

Appearance

Physical State: Clear / Transparent
Form: Liquid
Odor: Fruity / Sweet / Alcohol
Odor Threshold: Not available

pH: Not available
Boiling Point: 78.3°C (173°F)
Freezing Point: -114.1°C (-173.4°F)
Flashpoint / Method: 12°C (53.6°F), Closed Cup
Evaporation Rate: 1.7
Flammability limit
Upper: 12.0% by volume
Lower: 2.5% by volume
Specific Gravity: 0.793 @ 20°C (68°F)
Surface Tension: 24.5 mN/m @ 25.0°C (77°F)
Vapor Density: 1.59
Vapor Pressure: 44.6 mmHg @ 20°C (68°F)
Viscosity: 1.49 @ 20°C (68°F)
Auto-ignition temp.: 366.56°C (691.81°F) estimated
Partition coefficient: -0.31 log Kow (Ethanol)
n-octanol/water 0.05 log Kow (2-Propanol)

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Section 10: Stability and Reactivity

- Reactivity:** This product is stable and non-reactive under normal conditions of use, storage and transport.
- Chemical stability:** Material is stable under normal conditions
- Conditions to avoid:** Avoid contact with heat, open flame, other ignition sources or incompatible materials.
- Incompatible materials:** Acids. Strong oxidizing agents. Isocyanates. Chlorine.
- Possibility of hazardous reactions:** Hazardous polymerization does not occur.
- Hazardous decomposition products:** None known.

Section 11: Toxicological Information

INFORMATION ON LIKELY ROUTES OF EXPOSURE

- Inhalation:** Prolonged inhalation may be harmful.
- Skin contact:** No adverse effects due to skin contact are expected beyond temporary irritation.
- Eye contact:** Causes serious eye irritation.
- Ingestion:** Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics

Headache. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling and blurred vision. Coughing.

ACUTE TOXICITY

Component	Species	Test results
Ethanol (CAS 64-17-5)		
Acute Inhalation: LC50	Mouse	39 mg/l, 4 hours
	Rat	20000 ppm, 10 hours
Acute Oral: LD50	Dog	5.5 g/kg
	Guinea Pig	5.6 g/kg
	Mouse	3450 mg/kg
	Rat	6.2 kg/kg
2-Propanol (CAS 67-63-0)		
Acute Dermal: LD50	Rabbit	12800 mg/kg
Acute Oral: LD50	Dog	4797 mg/kg
	Mouse	3600 mg/kg
	Rabbit	5.03 g/kg
	Rat	4.7 g/kg

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CHRONIC TOXICITY

Carcinogenicity

The International Agency for Research on Cancer (IARC) has determined alcoholic beverages are carcinogenic to humans and the occurrence of malignant tumors of the oral cavity, pharynx, larynx, esophagus and liver is causally related to the consumption of alcoholic beverages in humans. The American Conference of Governmental Industrial Hygienists (ACGIH) list ethyl alcohol as an A4 - Not classifiable as a Human Carcinogen.

This product is for industrial use only and not intended for human consumption. Therefore, hazards typically associated with ethanol consumption do not warrant concern as these are not likely to result from the use of this product.

REPRODUCTIVE TOXICITY

Consumption of alcoholic beverages have the potential for developmental hazards for human health. This product is for industrial use only and not intended for human consumption. Therefore, hazards typically associated with ethanol consumption do not warrant concern as these are not likely to result from the use of this product.

TARGET ORGAN SYSTEMIC TOXICANT

Single Exposure Target organs: Central nervous system. May cause drowsiness or dizziness.
Repeated Exposure Repeated high oral doses may cause liver damage.

ASPIRATION HAZARD

Not an aspiration hazard

CHRONIC EFFECTS

Prolonged inhalation may be harmful

Section 12: Ecological Information

ECOTOXICITY

Component	Species	Test results
Ethanol (CAS 64-17-5)		
Aquatic Crustacea: EC50	Water flea (Ceriodaphnia Dubia)	>100 mg/l, 48 hr
Aquatic Fish: LC50	Fathead Minnow (Pimephales promelas)	>100 mg/l, 96 hr
Aquatic Plant: EC50	Fresh water algae (Chlorella vulgaris)	>100 mg/l, 72 hr
2-Propanol (CAS 67-63-0)		
Aquatic Crustacea: EC50	Water flea (Daphnia magna)	>100 mg/l, 24 hr
Aquatic Fish: LC50	Fathead Minnow (Pimephales promelas)	>100 mg/l, 96 hr
Aquatic Plant: EC50	Green algae (Desmodesmus subspicatus)	>2000 mg/l, 72 hr

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Biodegradation:	Readily biodegradable. OECD Test Guideline 301B (28 d): >60% (Ethanol) BOD5 (5 d): 53% (2-propanol)
Mobility in soil:	No data available
Other adverse effects:	No other adverse environmental effects are expected from this product.

Section 13: Disposal Considerations

Do not contaminate water, food, or feed by disposal.

PESTICIDE DISPOSAL:	Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
CONTAINER DISPOSAL:	Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available.

Section 14: Transportation Information

DOT/IMDG

UN Number:	UN1993
UN Proper Shipping Name:	FLAMMABLE LIQUID N.O.S. (CONTAINS 2-PROPANOL AND ETHANOL)
Transport Hazard Class:	3
Packing Group:	II

DOT Labels:



ERG Number:	128
IMDG Marine Pollutant:	No

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Section 15: Regulatory Information

OSHA:	Hazardous chemical
WHIMIS:	Class B / 2; Class D / 2 / B
TSCA 12(b):	Not regulated
SARA 302:	Not regulated
SARA 304:	Not regulated
SARA 311 and 312:	Fire hazard and acute / chronic health hazard
SARA 313:	Not regulated
CERCLA List:	Listed
SWDA:	Not regulated
CAA:	Not regulated
STATE:	Ingredients are found in following state right-to-know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts, Rhode Island.

INTERNATIONAL INVENTORIES:

COUNTRY/REGION	INVENTORY	STATUS
Australia	AICS	Yes
Canada	DSL	Yes
China	IECSC	Yes
Europe	REACH	Yes
Japan	ENCS	Yes
Korea	ECL	Yes
New Zealand	NZIoC	Yes
Philippines	PICCS	Yes
United States & Puerto Rico	TSCA	Yes

US EPA PESTICIDE LABELING:

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION
KEEP OUT OF REACH OF CHILDREN
NOT INTENDED FOR HUMAN CONSUMPTION

Note on signal words:

GHS uses only two signal words, "danger" and "warning," while current pesticide labels bear the signal word "caution" for less severe hazards.

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Section 16: Other Information

HMIS ratings:

Health:	2
Flammability:	3
Physical hazard:	0

NFPA ratings:

Health:	2
Flammability:	3
Physical hazard:	0

Disclaimer

All statements, technical information and recommendations on this SDS are believed to be accurate and were obtained from sources currently available to us that we believe to be reliable. We make no warranty, express or implied, with respect to this information regarding its accuracy. Some information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The conditions or methods of handling, storage, use or disposal of this product are beyond our control and may be beyond our knowledge. Therefore, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the handling, storage, use or disposal of this product. Users should make their own investigations to determine the suitability of the information for their particular purposes and should know and comply with all applicable rules, regulations and laws relating to this product.

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