

PRODUCT NAME: **CITRIC ACID BLENDER**

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MSDS NO: **C670**

EFFECTIVE DATE: March 28, 2008

MANUFACTURED BY: **Commercial Alcohols**
 Bruce Energy Centre 275 Bloomfield Road 2 Chelsea Lane
 4th Concession Chatham, Brampton, Ontario
 Tiverton, Ontario Ontario L6T 3Y4
 N0G 2T0 N7M 5J5

EMERGENCY PHONE NUMBER: CANUTEC (613) 996-6666

NON-EMERGENCY INFORMATION PHONE NUMBER: (905) 790-7500

TRANSPORTATION

| | | | | | |
|--------------------------|---------------------------|--------------------|------------------|-------------|------|
| PRIMARY CLASS: | 3 | CLASS NAME: | FLAMMABLE LIQUID | UN#: | 1987 |
| SUBSIDIARY CLASS: | NONE | | | | |
| SHIPPING NAME: | ALCOHOLS, N.O.S.(ETHANOL) | | | | |

I. EMERGENCY AND FIRST AID PROCEDURE

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| <u>INGESTION</u> | <ul style="list-style-type: none"> Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing. DO NOT INDUCE VOMITING. Have victim drink about 250ml (8fl. oz.) of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Seek medical assistance immediately. |
| <u>SKIN</u> | <ul style="list-style-type: none"> Flush contaminated area with water for at least 20 minutes. Remove contaminated clothing under running water. Completely decontaminate clothing before re-use, or discard. If irritation occurs seek medical attention. |
| <u>INHALATION</u> | <ul style="list-style-type: none"> Remove victim to fresh air. Artificial respiration should be given if breathing has stopped and cardiopulmonary resuscitation if heart has stopped. Oxygen may be given if necessary. Seek medical attention immediately. |
| <u>EYES</u> | <ul style="list-style-type: none"> Immediately flush eyes with water for at least 20 minutes, holding the eyelids open. Seek medical attention immediately. |
| <u>NOTES TO PHYSICIAN</u> | <ul style="list-style-type: none"> Symptoms of ethanol intoxication vary with the alcohol level of the blood. Mild alcohol intoxication occurs at blood levels between 0.05-0.15% and approximately 25% of individuals will show signs of intoxication at these levels. Above 0.15% the person is definitely under the influence of ethanol and 50-95% of individuals at this level are clinically intoxicated. Severe poisoning occurs when the blood ethanol level is 0.3-0.5%. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs or the excessive administration of fluids. This product also contains 10.5 % by weight of citric acid. The principal manifestation of acid poisoning is corrosion. |

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT. HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, IS MADE WITH RESPECT TO INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN.

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II. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT, °C

- 16 (Tag closed cup, ASTM D-56)

OTHER IMPORTANT DATA

| COMPONENT | % w/w | FLAMMABLE LIMITS, % V/V | | VAPOUR PRESSURE KPA AT 20°C | VAPOUR DENSITY (AIR = 1) | AUTOIGNITION POINT, °C |
|-------------------|--------------|-------------------------|-------|--------------------------------|-----------------------------|------------------------|
| | | LOWER | UPPER | | | |
| (1) Ethyl Alcohol | 81.8 to 82.7 | 3.3 | 19.0 | 5.87 | 1.6 | 422 |
| (2) Citric acid | 10.5 to 11.5 | 3.6 | 29.0 | N/A | N/A | N/A |
| Water | remainder | | | | | |

EXTINGUISHING MEDIA

- Apply alcohol-type or all-purpose-type foams by manufacturers' recommended techniques for large fires.
- Use carbon dioxide or dry chemical media for small fires.
- Water is generally unsuitable and may help to spread the fire.

SPECIAL FIREFIGHTING PROCEDURES

- Use water spray to cool fire-exposed containers and structures.
- Use water spray to disperse vapours; reignition is possible.
- Use self-contained breathing apparatus and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS

- Vapours form from this product and may travel or be moved by air currents and ignited by pilot lights, other flames, sparks, heaters, electrical equipment, static discharges or other ignition sources at locations distant from handling point.

III. IDENTIFICATION

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|----------------------|--|-------------------------|------------------------|
| <u>CHEMICAL NAME</u> | CITRIC ACID CONCENTRATE IN ETHANOL | <u>CHEMICAL FAMILY</u> | ALCOHOLS/ORGANIC ACIDS |
| <u>FORMULA</u> | (1) CH ₃ - CH ₂ - OH (2) C ₆ -H ₈ -O ₇ | <u>MOLECULAR WEIGHT</u> | (1) 46.07 (2) 192 |
| <u>SYNONYMS</u> | <ul style="list-style-type: none"> • Citrus or citric acid extract, Citrus or citric acid flavour base, Citrus or citric flavour, Citrus or citric spirits, Citrus or citric concentrate. | | |
| <u>USE</u> | <ul style="list-style-type: none"> • Concentrate for the preparation of alcoholized citric- flavored beverages. | | |

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IV. PHYSICAL DATA

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| BOILING POINT, °C at 760mm Hg | 78.5 |
| FREEZING POINT, °C | Not Available |
| DENSITY, kg/L @ 20°C | 0.85 to 0.865 |
| COEFFICIENT OF WATER/OIL DISTRIBUTION | Separates from oil |
| pH | Not Applicable |
| DISTILLATION RANGE, °C | Ethanol- 78.0-79.0. Citric acid will melt at 153°C and decompose at higher temperatures. |
| MISCIBILITY IN WATER | Complete |
| % VOLATILES BY VOLUME | 88.5 to 89.5 |
| EVAPORATION RATE (butyl acetate = 1) | 1.7 |

APPEARANCE AND ODOUR

- Colourless liquid with typical lower alcohol odour.
- Odour threshold is in the range of 0.1 to 5100 ppm, according to the Canadian Standards Association publication Z94.4-M1982 (appendix 1).

V. INGREDIENTS AND TOXICOLOGICAL DATA

| INGREDIENT | % w/w | CAS NO. | TLV, ppm | LC50, ppm/4h. RAT, INHAL. | LD50, mg/kg RAT, ORAL | LD50, mg/kg RABBIT, SKIN |
|-------------------|------------------|----------|---------------|------------------------------|--------------------------|-----------------------------|
| (1) Ethyl Alcohol | 81.8 to 82.7 | 64-17-5 | 1000 | 31,623 | 7,060 | 20,000 |
| (2) Citric acid | 10.5 to 11.5 | 00077929 | not available | not available | 11,700 | not available |
| Water | remainder | | | | | |

VI. WHMIS CLASSIFICATION AND SYNERGISTIC MATERIALS

WHMIS CLASSIFICATION

- Citric acid is a corrosive solid (Class E). Ethanol is flammable and an eye irritant.

SYNERGISTIC MATERIALS

- Ethanol with carbon tetrachloride, chloroform, bromotrichloromethane, dimethylnitrosamine, thioacetamide.

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VII. HEALTH HAZARD DATA

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| <u>INGESTION</u> | <ul style="list-style-type: none"> • May cause dizziness, faintness, drowsiness, decreased awareness and responsiveness, euphoria, abdominal discomfort, nausea, vomiting, staggering gait, lack of co-ordination and coma. • Ingested citric acid may cause severe burning pain in the mouth, pharynx and abdomen followed by vomiting and diarrhoea of dark precipitated blood. Gastric or oesophageal perforation may also occur. |
| <u>SKIN ABSORPTION</u> | <ul style="list-style-type: none"> • Citric acid is corrosive and may cause a mild chemical burn. • For ethanol, no adverse effects with normal skin. However, potentially harmful amounts of material may be absorbed across markedly abraded skin when contact is sustained, particularly in children. |
| <u>INHALATION</u> | <ul style="list-style-type: none"> • High vapour concentrations may cause a burning sensation in the throat and nose, stinging and watering in the eyes. • At concentrations which cause irritation, dizziness, faintness, drowsiness, nausea and vomiting may also occur. |
| <u>SKIN CONTACT</u> | <ul style="list-style-type: none"> • Citric acid is corrosive and may cause a mild chemical burn. • No evidence of adverse effects from available information. |
| <u>EYE CONTACT</u> | <ul style="list-style-type: none"> • Eye contact with citric acid may result in corneal damage or blindness. • Ethanol is a severe eye irritant. Vapours can irritate eyes. |
| <u>EFFECT OF REPEATED OVEREXPOSURE</u> | <ul style="list-style-type: none"> • No information available for citric acid . • Long term repeated oral exposure to ethanol may result in the development of progressive liver injury with fibrosis. |
| <u>MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE</u> | <ul style="list-style-type: none"> • Repeated exposure to ethanol may exacerbate liver injury produced from other causes. • No information available for citric acid. |
| <u>OTHER EFFECTS OF OVEREXPOSURE</u> | <ul style="list-style-type: none"> • Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the foetus, producing a collection of effects which together constitute the foetal alcohol syndrome. These include mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioural disorders, and small size head. |

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VIII. REACTIVITY DATA

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| <u>STABILITY</u> | <ul style="list-style-type: none"> • Stable |
| <u>CONDITIONS TO AVOID</u> | <ul style="list-style-type: none"> • Sources of ignition |
| <u>INCOMPATIBILITY</u> | <ul style="list-style-type: none"> • Oxidizing materials |
| <u>HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS</u> | <ul style="list-style-type: none"> • Burning can produce carbon monoxide and/or carbon dioxide and/or formaldehyde. |
| <u>HAZARDOUS POLYMERIZATION</u> | <ul style="list-style-type: none"> • Will not occur |
| <u>CONDITIONS TO AVOID</u> | <ul style="list-style-type: none"> • None currently known |

IX. SPILL OR LEAK PROCEDURES

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|------------------------------|--|
| <u>SPILL</u> | <ul style="list-style-type: none"> • Contain spilled material. • Provide adequate ventilation and protective equipment. • Remove sources of heat, sparks or flames. • Spill should be collected in suitable containers or absorbed on a suitable absorbent material for subsequent disposal. |
| <u>WASTE DISPOSAL</u> | <ul style="list-style-type: none"> • Waste material should be disposed of in an approved incinerator or in a designated landfill site, in compliance with all federal, provincial and local government regulations. |

X. SPECIAL PROTECTION INFORMATION

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|--|---|
| <u>RESPIRATORY PROTECTION</u> | <ul style="list-style-type: none"> • Up to 1000 ppm, an approved organic vapour cartridge respirator can be used. • For concentrations above 1000 ppm, an air-supplying respirator is recommended. • The user should consult a respirator guide, such as the Canadian Standards Association's guide Z94.4-M1982. |
| <u>VENTILATION</u> | <ul style="list-style-type: none"> • The ventilation system should be non-sparking, grounded and separate from other exhaust ventilation systems. • Local ventilation is recommended when handling. |
| <u>PROTECTIVE GLOVES</u> | <ul style="list-style-type: none"> • Neoprene, butyl or natural rubber. |
| <u>EYE PROTECTION</u> | <ul style="list-style-type: none"> • Chemical resistant monogoggles when handling |
| <u>OTHER PROTECTIVE EQUIPMENT</u> | <ul style="list-style-type: none"> • Eye bath, safety shower and other protective equipment as required. |

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XI. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

- Keep away from heat, sparks and flames.
- Keep container closed when not in use.
- Use with adequate ventilation.
- Avoid breathing vapours.
- Avoid contact with eyes and skin.
- Wash exposed skin thoroughly after handling.
- Take precautions to prevent static electricity build-up when transferring contents.
- Wear impermeable gloves, impermeable full frontal apron to protect against splashes.
- Wash all clothing thoroughly after use.

OTHER PRECAUTIONS

- Good personal hygiene practices are suggested, such as abstaining from eating, drinking and smoking in the workplace.

XII. MSDS PREPARATION

PREPARED BY Alcohol Quality Assurance, Technical Services and Regulatory Affairs Department

PHONE NUMBER (905) 790-7500

DATE: March 28, 2008

COMMERCIAL ALCOHOLS URGES EACH CUSTOMER OR RECIPIENT OF THIS MSDS TO STUDY IT CAREFULLY TO BECOME AWARE OF AND UNDERSTAND THE HAZARDS ASSOCIATED WITH THE PRODUCT. THE READER SHOULD CONSIDER CONSULTING REFERENCE WORKS OR INDIVIDUALS WHO ARE EXPERTS IN VENTILATION, TOXICOLOGY OR FIRE PREVENTION, AS NECESSARY OR APPROPRIATE TO USE AND UNDERSTAND THE DATA CONTAINED IN THIS MSDS.

TO PROMOTE SAFE USE AND HANDLING OF THIS PRODUCT, EACH CUSTOMER OR RECIPIENT SHOULD

- (1) NOTIFY EMPLOYEES, AGENTS, CONTRACTORS AND OTHERS WHO MAY USE THIS MATERIAL, OF THE INFORMATION IN THIS MSDS AND ANY OTHER INFORMATION REGARDING HAZARDS OR SAFETY,
- (2) FURNISH THIS SAME INFORMATION TO EACH CUSTOMER FOR THE PRODUCT, AND
- (3) REQUEST CUSTOMERS TO NOTIFY THEIR EMPLOYEES, CUSTOMERS, AND OTHER USERS OF THE PRODUCT OF THIS INFORMATION.