

PRODUCT NAME: **ISOPROPYL ALCOHOL 70% VOL**

Page 1 of 6

MSDS NO: **6020**

EFFECTIVE DATE: February 1, 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#: | 1219 |
| SUBSIDIARY CLASS: | NONE | | | | |
| SHIPPING NAME: | Isopropanol | | | | |

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. |
| <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> | |

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.

PRODUCT NAME: **ISOPROPYL ALCOHOL 70% VOL**

Page 2 of 6

MSDS NO: **6020**

EFFECTIVE DATE: February 1, 2008

II. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT, °C

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

OTHER IMPORTANT DATA

| COMPONENT | % V/V | FLAMMABLE LIMITS, % V/V | | VAPOUR PRESSURE KPA AT 20°C | VAPOUR DENSITY (AIR = 1) | AUTOIGNITION POINT, °C |
|-----------------|---------|-------------------------|-------|--------------------------------|-----------------------------|------------------------|
| | | LOWER | UPPER | | | |
| (1) Isopropanol | 70 | 2.5 | 12.0 | 4.40 | 2.1 | 399 |
| Water | Balance | | | | | |

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> | ISOPROPANOL | <u>CHEMICAL FAMILY</u> | ALCOHOLS |
| <u>FORMULA</u> | (1) CH ₃ - CHO - CH ₃ | <u>MOLECULAR WEIGHT</u> | (1) 60.09 |
| <u>SYNONYMS</u> | <ul style="list-style-type: none"> • 2-propanol, dimethyl carbinol, isopropanol alcool isopropylique, IPA. | | |
| <u>USE</u> | <ul style="list-style-type: none"> • Rubbing alcohol. | | |

PRODUCT NAME: **ISOPROPYL ALCOHOL 70% VOL**

Page 3 of 6

MSDS NO: **6020**

EFFECTIVE DATE: February 1, 2008

IV. PHYSICAL DATA

| | |
|---------------------------------------|--------------------|
| BOILING POINT, °C at 760mm Hg | 82.1 |
| FREEZING POINT, °C | -26.7 |
| DENSITY, kg/L @ 20°C | 0.876 |
| COEFFICIENT OF WATER/OIL DISTRIBUTION | Separates from oil |
| pH | Not Applicable |
| DISTILLATION RANGE, °C | 80.7-100.1 |
| MISCIBILITY IN WATER | Complete |
| % VOLATILES BY VOLUME | 100 |
| EVAPORATION RATE (butyl acetate = 1) | 2.3 |

APPEARANCE AND ODOUR

- Colourless liquid with typical lower alcohol odour.
- The odour threshold of isopropanol is between 40 and 200 ppm, according to the Canadian Centre of Occupational Health and Safety.

V. INGREDIENTS AND TOXICOLOGICAL DATA

| INGREDIENT | % V/V | CAS NO. | TLV, ppm | LC50, ppm/4h. RAT, INHAL. | LD50, mg/kg RAT, ORAL | LD50, mg/kg RABBIT, SKIN |
|-----------------|---------|---------|----------|------------------------------|--------------------------|-----------------------------|
| (1) Isopropanol | 70 | 67-63-0 | 400 | 16,970 | 4,420 | 13,000 |
| Water | Balance | | | | | |

REFERENCES: ACGIH (1988-1989), RTECS (1983).

VI. WHMIS CLASSIFICATION AND SYNERGISTIC MATERIALS

WHMIS CLASSIFICATION

- Flammable liquid (B-2), eye irritant (D-2B).

SYNERGISTIC MATERIALS



PRODUCT NAME: **ISOPROPYL ALCOHOL 70% VOL**

Page 4 of 6

MSDS NO: **6020**

EFFECTIVE DATE: February 1, 2008

VII. HEALTH HAZARD DATA

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|---|---|
| <u>INGESTION</u> | <ul style="list-style-type: none">• Ingestion of isopropanol may cause drowsiness, gastrointestinal pain, cramps, nausea, vomiting and diarrhoea; unconsciousness and death may follow massive exposures. |
| <u>SKIN ABSORPTION</u> | <ul style="list-style-type: none">• 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">• Mild irritation of the upper respiratory tract may begin at approximately 400 ppm.• High concentrations may cause drowsiness, lack of coordination and deep narcosis. |
| <u>SKIN CONTACT</u> | <ul style="list-style-type: none">• Mild irritant.• Repeated or prolonged exposure may lead to drying and cracking. |
| <u>EYE CONTACT</u> | <ul style="list-style-type: none">• Severe eye irritant.• Isopropanol vapours can irritate eyes beginning at approximately 400 ppm.• Eye damage from contact with liquid is reversible and proper treatment will result in healing within a few days. Damage is usually mild to moderate conjunctivitis, seen mainly as redness of the conjunctiva. |
| <u>EFFECT OF REPEATED OVEREXPOSURE</u> | |
| <u>MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE</u> | |
| <u>OTHER EFFECTS OF OVEREXPOSURE</u> | |

PRODUCT NAME: **ISOPROPYL ALCOHOL 70% VOL**

Page 5 of 6

MSDS NO: **6020**

EFFECTIVE DATE: February 1, 2008

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

| | |
|------------------------------|--|
| <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. |

PRODUCT NAME: **ISOPROPYL ALCOHOL 70% VOL**

Page 6 of 6

MSDS NO: **6020**

EFFECTIVE DATE: February 1, 2008

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.

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: February 1, 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.