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MSDS Number:EZ060041 MSDS Version:002

002 01/12/06 ***ISOPROPANOL***
PRODUCT NAME:
ISOPROPANOL
MSDS #: EZ060041

SECTION 1. PRODUCT IDENTIFICATION

PRODUCT NAME: ISOPROPANOL

CHEMICAL NAME: 2-PROPANOL
SYNONYM(S): Isopropyl Alcohol
MOLECULAR FORMULA: C3H8O
MOLECULAR WEIGHT: 60.09
PRODUCT USE: SOLVENT

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

WEIGHT % - COMPONENT - (CAS REGISTRY NO.)
100 ISOPROPANOL (000067-63-0)

SECTION 3. HAZARDS IDENTIFICATION

FLAMMABLE LIQUID AND VAPOR
HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS AND IRRITATION OF THE EYES OR RESPIRATORY TRACT
PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE DRYING, CRACKING, OR IRRITATION
FORMS EXPLOSIVE PEROXIDES
HMIS HAZARD RATINGS: HEALTH - 1, FLAMMABILITY - 3, CHEMICAL REACTIVITY - 0
NFPA HAZARD RATINGS: HEALTH - 1, FLAMMABILITY - 3, CHEMICAL REACTIVITY - 0
NOTE: HMIS AND NFPA RATINGS INVOLVE DATA AND INTERPRETATIONS THAT MAY VARY FROM COMPANY TO COMPANY. THEY ARE INTENDED ONLY FOR RAPID, GENERAL IDENTIFICATION OF THE MAGNITUDE OF THE SPECIFIC HAZARD. TO DEAL ADEQUATELY WITH THE SAFE HANDLING OF THIS MATERIAL, ALL THE INFORMATION CONTAINED IN THIS MSDS MUST BE CONSIDERED.

SECTION 4. FIRST AID MEASURES

INHALATION: MOVE TO FRESH AIR. TREAT SYMPTOMATICALLY. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

EYES: IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IF SYMPTOMS OCCUR.
SKIN: WASH WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION IF SYMPTOMS OCCUR. WASH CONTAMINATED CLOTHING BEFORE REUSE. DESTROY OR THOROUGHLY CLEAN CONTAMINATED SHOES.
INGESTION: SEEK MEDICAL ADVICE.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE (CO2), ALCOHOL FOAM
SPECIAL FIRE-FIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING. USE WATER SPRAY TO KEEP FIRE-EXPOSED CONTAINERS COOL. WATER MAY BE INEFFECTIVE IN FIGHTING THE FIRE.
HAZARDOUS COMBUSTION PRODUCTS: CARBON DIOXIDE, CARBON MONOXIDE
UNUSUAL FIRE AND EXPLOSION HAZARDS: FLAMMABLE. VAPORS MAY CAUSE A FLASH FIRE OR IGNITE EXPLOSIVELY. VAPORS MAY TRAVEL CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK. PREVENT BUILDUP OF VAPORS OR GASES TO EXPLOSIVE CONCENTRATIONS. FORMS EXPLOSIVE PEROXIDES WHICH MAY BE SHOCK SENSITIVE.

SECTION 6. ACCIDENTAL RELEASE MEASURES

ELIMINATE ALL IGNITION SOURCES. ABSORB SPILL WITH VERMICULITE OR OTHER INERT MATERIAL, THEN PLACE IN A CONTAINER FOR CHEMICAL WASTE.
FOR LARGE SPILLS: USE WATER SPRAY TO DISPERSE VAPORS AND DILUTE SPILL TO A NONFLAMMABLE MIXTURE. PREVENT RUNOFF FROM ENTERING DRAINS, SEWERS, OR STREAMS.

SECTION 7. HANDLING AND STORAGE

PERSONAL PRECAUTIONARY MEASURES: AVOID CONTACT WITH EYES AND PROLONGED OR REPEATED CONTACT WITH SKIN. AVOID BREATHING HIGH VAPOR CONCENTRATIONS. USE ONLY WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING.
PREVENTION OF FIRE AND EXPLOSION: KEEP AWAY FROM HEAT, SPARKS, AND FLAME. KEEP FROM CONTACT WITH OXIDIZING MATERIALS. USE ONLY WITH ADEQUATE VENTILATION. COMPLY WITH ALL NATIONAL, STATE, AND LOCAL CODES PERTAINING TO THE STORAGE, HANDLING, DISPENSING, AND DISPOSAL OF FLAMMABLE LIQUIDS. DO NOT EXPOSE TO AIR. AFTER OPENING, PURGE CONTAINER WITH NITROGEN BEFORE RECLOSING. PERIODICALLY TEST FOR PEROXIDE FORMATION ON LONG-TERM STORAGE. IF PEROXIDE FORMATION IS SUSPECTED, DO NOT OPEN OR MOVE CONTAINER. DO NOT ALLOW TO EVAPORATE TO NEAR DRYNESS. DISTILL WITH CAUTION. ADDITION OF WATER OR APPROPRIATE REDUCING MATERIALS WILL LESSEN PEROXIDE FORMATION.
STORAGE: STORE AWAY FROM HEAT AND LIGHT. KEEP CONTAINER TIGHTLY CLOSED. KEEP CONTAINER IN A WELL-VENTILATED PLACE.
SHELF LIFE FOR THIS PRODUCT IS 2 YEARS IF UNOPENED, ONCE PRODUCT IS OPENED SHELF LIFE VARIES UPON ENVIRONMENT OF STORAGE.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS:
  ACGIH THRESHOLD LIMIT VALUE (TLV): 400 PPM TWA; 500 PPM STEL
  OSHA (USA) PERMISSIBLE EXPOSURE LIMIT (PEL, 1989 TABLE Z-1-A VALUES OR SECTION-SPECIFIC STANDARDS): 400 PPM TWA; 500 PPM STEL
VENTILATION: GOOD GENERAL VENTILATION (TYPICALLY 10 AIR CHANGES PER HOUR) SHOULD BE USED. VENTILATION RATES SHOULD BE MATCHED TO CONDITIONS. USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO MAINTAIN AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS.

RESPIRATORY PROTECTION: IF ENGINEERING CONTROLS DO NOT MAINTAIN AIRBORNE CONCENTRATIONS BELOW RECOMMENDED EXPOSURE LIMITS, AN APPROVED RESPIRATOR MUST BE WORN. RESPIRATOR TYPE: MIST, ORGANIC VAPOR. IF RESPIRATORS ARE USED, A PROGRAM SHOULD BE INSTITUTED TO ASSURE COMPLIANCE WITH OSHA STANDARD 29 CFR 1910.134.
EYE PROTECTION: WEAR SAFETY GLASSES WITH SIDE SHIELDS (OR GOGGLES).
SKIN PROTECTION: FOR OPERATIONS WHERE PROLONGED OR REPEATED SKIN CONTACT MAY OCCUR, CHEMICAL-RESISTANT GLOVES SHOULD BE WORN. CONTACT GLOVE MANUFACTURER FOR SPECIFIC INFORMATION.
RECOMMENDED DECONTAMINATION FACILITIES: EYE BATH, WASHING FACILITIES

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- PHYSICAL FORM: LIQUID
- COLOR: COLORLESS
- ODOR: ALCOHOL
- ODOR THRESHOLD: 22 PPM
- SPECIFIC GRAVITY AT 20 C (68 F) (WATER = 1): 0.786
- VAPOR PRESSURE AT 20 C (68 F): 43.3 MBAR (32.8 MM HG)
- VAPOR DENSITY (AIR = 1): 2.1
- EVAPORATION RATE (N-BUTYL ACETATE = 1): 1.7
- BOILING POINT: 82 C (180 F)
- MELTING POINT: -90 C (-130 F)
- VISCOSITY AT 20 C (68 F): 2.38 MPA.S OR CP
- SOLUBILITY IN WATER: COMPLETE
- PH: NOT AVAILABLE
- OCTANOL/WATER PARTITION COEFFICIENT: LOG P = 0.14, P = 1.4
- FLASH POINT (TAG CLOSED CUP): 13 C (55 F)
- LOWER EXPLOSIVE LIMIT AT 26 C (79 F): 2.5 VOLUME %
- UPPER EXPLOSIVE LIMIT AT 66 C (151 F): 12.1 VOLUME %
- AUTOIGNITION TEMPERATURE (ASTM D2155): 432 C (810 F)
- SENSITIVITY TO MECHANICAL IMPACT: INSENSITIVE AT 100 KG-CM
- SENSITIVITY TO STATIC DISCHARGE: NOT AVAILABLE

SECTION 10. STABILITY AND REACTIVITY DATA

STABILITY: STABLE; HOWEVER, FORMS EXPLOSIVE PEROXIDES ON CONCENTRATION.
INCOMPATIBILITY: MATERIAL CAN REACT VIOLENTLY WITH STRONG OXIDIZING AGENTS.
HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION 11. TOXICOLOGICAL INFORMATION

EFFECTS OF EXPOSURE:
INHALATION: HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS AND IRRITATION.
EYES: MAY CAUSE TRANSIENT IRRITATION.
SKIN: PROLONGED OR REPEATED CONTACT MAY CAUSE DRYING, CRACKING, OR IRRITATION. THIS MATERIAL HAS A LOW POTENTIAL TO CAUSE ALLERGIC SKIN REACTIONS; HOWEVER, CASES OF HUMAN SKIN SENSITIZATION HAVE BEEN REPORTED.
INGESTION: EXPECTED TO BE A LOW INGESTION HAZARD.
ACUTE TOXICITY DATA:
ORAL LD-50 (RAT): 5.8 G/KG
ORAL LD-50 (RABBIT): 7.9 G/KG
ORAL LD-50 (DOG): 6.2 G/KG
INHALATION LC-50 (RAT): 12,000 PPM/8 HOUR(S)
DERMAL LD-50 (RABBIT): 16.4 ML/KG
SKIN IRRITATION (RABBIT): SLIGHT

REPEATED SKIN APPLICATION (RABBIT): SLIGHT IRRITATION
EYE IRRITATION (RABBIT): SLIGHT TO MODERATE
DEFINITIONS FOR THE FOLLOWING SECTION(S): LOEL = LOWEST-OBSERVED-EFFECT LEVEL, NOAEL = NO OBSERVED-ADVERSE-EFFECT LEVEL, NOEL = NO-OBSERVED-EFFECT LEVEL.
SUBCHRONIC TOXICITY DATA:
INHALATION STUDY (41 DAYS, MOUSE): LOEL = 10,900 PPM (NARCOSIS) (MINOR TARGET ORGAN EFFECTS: LIVER) (ONLY CONCENTRATION TESTED)
DERMAL STUDY (30 DAYS, RABBIT): NOEL = 45 MG/KG/DAY (ONLY CONCENTRATION TESTED)
ORAL STUDY (27 WEEKS, RAT): LOEL = 0.5% IN DRINKING WATER (REDUCED BODY WEIGHT GAIN); NOEL = NOT ESTABLISHED
REPRODUCTIVE TOXICITY DATA:
INHALATION STUDY (19 DAYS, RAT): LOEL FOR MATERNAL TOXICITY = 10,000 PPM (NARCOSIS) (REDUCED FEED INTAKE); NOEL FOR MATERNAL TOXICITY = 3500 PPM; LOEL FOR TERATOGENICITY = 7000 PPM; NOEL FOR TERATOGENICITY = 3500 PPM; NOAEL FOR DEVELOPMENTAL TOXICITY = 3500 PPM
ORAL STUDY (10 DAYS, RAT): LOEL FOR MATERNAL TOXICITY = 800 MG/KG/DAY; NOAEL FOR MATERNAL TOXICITY = 400 MG/KG/DAY; NOAEL FOR DEVELOPMENTAL TOXICITY = 400 MG/KG/DAY; LOEL FOR TERATOGENICITY = 1200 MG/KG/DAY
ORAL STUDY (13 DAYS, RABBIT): LOEL FOR MATERNAL TOXICITY = 480 MG/KG/DAY; NOAEL FOR MATERNAL TOXICITY = 240 MG/KG/DAY; NOAEL FOR DEVELOPMENTAL TOXICITY = 480 MG/KG/DAY; NOEL FOR TERATOGENICITY = 480 MG/KG/DAY
ORAL NEUROTOXICITY STUDY (16 DAYS, RAT): LOEL FOR MATERNAL TOXICITY = 1200 MG/KG/DAY; NOEL FOR MATERNAL TOXICITY = 700 MG/KG/DAY; NOEL FOR DEVELOPMENTAL NEUROTOXICITY = 1200 MG/KG/DAY
MUTAGENICITY/GENOTOXICITY DATA:
SALMONELLA TYPHIMURIUM ASSAY (AMES TEST): NEGATIVE (+/- ACTIVATION)
CHO/HGPRT ASSAY: NEGATIVE
MOUSE MICRONUCLEUS ASSAY: NEGATIVE

SECTION 12. ECOLOGICAL INFORMATION

INTRODUCTION: THIS ENVIRONMENTAL EFFECTS SUMMARY IS WRITTEN TO ASSIST IN ADDRESSING EMERGENCIES CREATED BY AN ACCIDENTAL SPILL WHICH MIGHT OCCUR DURING THE SHIPMENT OF THIS MATERIAL, AND, IN GENERAL, IT IS NOT MEANT TO ADDRESS DISCHARGES TO SANITARY SEWERS OR PUBLICALLY OWNED TREATMENT WORKS.
SUMMARY: DATA FOR THIS MATERIAL HAVE BEEN USED TO ESTIMATE ITS ENVIRONMENTAL IMPACT. IT HAS THE FOLLOWING PROPERTIES: A HIGH BIOCHEMICAL OXYGEN DEMAND AND A POTENTIAL TO CAUSE OXYGEN DEPLETION IN AQUEOUS SYSTEMS, A LOW POTENTIAL TO AFFECT AQUATIC ORGANISMS, A LOW POTENTIAL TO AFFECT SECONDARY WASTE TREATMENT MICROBIAL METABOLISM, A LOW POTENTIAL TO AFFECT THE GERMINATION AND/OR EARLY GROWTH OF SOME PLANTS, A LOW POTENTIAL TO AFFECT THE GROWTH OF SOME PLANT SEEDLINGS, A HIGH POTENTIAL TO BIODEGRADE (LOW PERSISTENCE) WITH UNACCLIMATED MICROORGANISMS FROM ACTIVATED SLUDGE.
WHEN DILUTED WITH A LARGE AMOUNT OF WATER, THIS MATERIAL RELEASED DIRECTLY OR INDIRECTLY INTO THE ENVIRONMENT IS NOT EXPECTED TO HAVE A SIGNIFICANT IMPACT.
OXYGEN DEMAND DATA:
THOD: 2.40 G OXYGEN/G
COD: 2.23 G OXYGEN/G
BOD-5: 1.19-1.72 G OXYGEN/G
BOD-20 AT 10 MG/L: 1.68 G OXYGEN/G
ACUTE AQUATIC EFFECTS DATA:
96-H LC-50 (FATHEAD MINNOW): >1,000 MICROLITER(S)/L
48-H LC-50 (GOLDEN ORFE): 8970-9280 MG/L
96-H LC-50 (DAPHNID): >1,000 MICROLITER(S)/L
SECONDARY WASTE WATER TREATMENT EFFECTS: 5-HOUR IC-50: >5,000 MG/L
7-DAY PLANT GERMINATION EFFECTS - NO-ADVERSE-EFFECT CONCENTRATION:

LETTUCE: >1000 MICROLITER(S)/L
RADISH: >1000 MICROLITER(S)/L
RYEGRASS: >1000 MICROLITER(S)/L
7-DAY PLANT SEEDLING EFFECTS - NO-ADVERSE-EFFECT CONCENTRATION:
LETTUCE: >1000 MICROLITER(S)/L
MARIGOLD: >1000 MICROLITER(S)/L
RADISH: >1000 MICROLITER(S)/L
CORN: >1000 MICROLITER(S)/L

SECTION 13. DISPOSAL CONSIDERATIONS

DISCHARGE, TREATMENT, OR DISPOSAL MAY BE SUBJECT TO NATIONAL, STATE, OR LOCAL LAWS. MIX WITH COMPATIBLE CHEMICAL WHICH IS LESS FLAMMABLE AND INCINERATE. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUE, FOLLOW LABEL WARNINGS EVEN AFTER CONTAINER IS EMPTIED. RESIDUAL VAPORS MAY EXPLODE ON IGNITION; DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.

SECTION 14. TRANSPORT INFORMATION

- DOT (USA) STATUS: REGULATED
- CLASS 3, PACKING GROUP II
- AIR - INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)
- ICAO STATUS: REGULATED
- CLASS 3, PACKING GROUP II
- SEA - INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)
- IMDG STATUS: REGULATED
- CLASS 3.2, PACKING GROUP II

SECTION 15. REGULATORY INFORMATION

- THIS DOCUMENT HAS BEEN PREPARED IN ACCORDANCE WITH THE MSDS REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200.
- OSHA HAZARDOUS CHEMICAL(S): ISOPROPANOL
- CALIFORNIA PROPOSITION 65 (SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986): MATERIAL(S) KNOWN TO THE STATE TO CAUSE CANCER: NONE
- CALIFORNIA PROPOSITION 65 (SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986): MATERIAL(S) KNOWN TO THE STATE TO CAUSE ADVERSE REPRODUCTIVE EFFECTS: NONE
- MASSACHUSETTS SUBSTANCE LIST: ISOPROPANOL
- NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST: ISOPROPANOL
- PENNSYLVANIA HAZARDOUS SUBSTANCE LIST: ISOPROPANOL
- THIS DOCUMENT HAS BEEN PREPARED IN ACCORDANCE WITH THE MSDS REQUIREMENTS OF THE WHMIS CONTROLLED PRODUCTS REGULATION.
- WHMIS (CANADA) INGREDIENT DISCLOSURE LIST: ISOPROPANOL
- WHMIS (CANADA) STATUS: CONTROLLED
- WHMIS (CANADA) CONTROLLED MATERIAL(S): ISOPROPANOL
- WHMIS (CANADA) HAZARD CLASSIFICATION: B/2
- CARCINOGENICITY CLASSIFICATION (COMPONENTS PRESENT AT 0.1% OR MORE):
  - INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC): NOT LISTED
  - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH): NOT LISTED
  - NATIONAL TOXICOLOGY PROGRAM (NTP): NOT LISTED
  - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA): NOT LISTED
- CHEMICAL(S) SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OR TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) OF 1986 AND 40 CFR PART 372: NONE
- SARA (U.S.A.) SECTIONS 311 AND 312 HAZARD CLASSIFICATION(S): FIRE HAZARD,

IMMEDIATE (ACUTE) HEALTH HAZARD
- US TOXIC SUBSTANCES CONTROL ACT (TSCA): THIS PRODUCT IS LISTED ON THE TSCA INVENTORY. ANY IMPURITIES PRESENT IN THIS PRODUCT ARE EXEMPT FROM LISTING.
- CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) AND DOMESTIC SUBSTANCES LIST (DSL): THIS PRODUCT IS LISTED ON THE DSL OR OTHERWISE COMPLIES WITH CEPA NEW SUBSTANCE NOTIFICATION REQUIREMENTS.
- EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS): THIS PRODUCT IS LISTED ON EINECS.
- AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) AND NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS): THIS PRODUCT IS LISTED ON AICS OR OTHERWISE COMPLIES WITH NICNAS.
- JAPANESE HANDBOOK OF EXISTING AND NEW CHEMICAL SUBSTANCES: THIS PRODUCT IS LISTED IN THE HANDBOOK OR HAS BEEN APPROVED IN JAPAN BY NEW SUBSTANCE NOTIFICATION.

For Additional Information:
Contact: PTI Process Chemicals.
During business hours, Central Time - 815-653-3856

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END OF MSDS