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MATERIAL SAFETY DATA SHEET

ISOPROPYL ALCOHOL 70%

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SECTION 1 - PRODUCT IDENTIFICATION AND HAZARDOUS COMPONENTS

PRODUCT NAME: Isopropyl Alcohol 70%

SYNONYMS: Isopropyl Rubbing Alcohol, Isopropanol 70%, 2-Propanol 70%

MOLECULAR FORMULA: C₃H₈O (in aqueous soln.) MOLECULAR WEIGHT: 60.09

CHEMICAL FAMILY: Aliphatic alcohol

<u>INGREDIENT (CAS #)</u>	<u>%</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Isopropyl alcohol (67-63-0)	70	400 ppm	400 ppm
Water	30	N/A	N/A

SECTION 2 - PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT: 180 to 181°F VAPOR PRESSURE: 96 at 100, 230 at 131 (mmHg at °F)

MELTING POINT: -128°F VAPOR DENSITY: 1.6 (Air = 1)

SPECIFIC GRAVITY: 0.79 at 68°F EVAPORATION RATE: 2.3 (n-Bu Acetate = 1)

SPECIFIC GRAVITY OF VAPOR: > 1 SOLUBILITY IN WATER: 100.00 at 68°F (at 1 atm, Air = 1) (wt. % at °F)

APPEARANCE AND ODOR: Clear, colorless, volatile, flammable liquid; characteristic odor.

SECTION 3 - FIRE AND EXPLOSION DATA

FLASH POINT (METHOD): 70.5°F (TAG OPEN CUP)

FLAMMABLE LIMITS (% Volume in Air): LOWER: 2% UPPER: 12%

EXTINGUISHING MEDIA: Carbon dioxide, chemical foam, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES: **FLAMMABLE**. Clear fire area of unprotected personnel. **DO NOT** enter confined fire space without full protective gear; including helmet with face shield, bunker coats, gloves, boots, and NIOSH-approved positive pressure self-contained breathing apparatus. Water spray may be used to minimize vapors and cool containers exposed to heat and flame, however, caution must be used to avoid spreading burning liquid.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This material is **flammable** and may be ignited by heat, spark, flame or static discharge. Intense heat from fires could cause vapor pressure build-up in exposed containers which could result in container rupture.

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY: Stable (X) Unstable ()

INCOMPATIBILITY (MATERIALS TO AVOID): Anhydride, isocyanate, acetylaldehyde, chlorine, ethylene oxide, hydrogen peroxide, aluminum and organometallic contaminants.

HAZARDOUS DECOMPOSITION PRODUCTS: As with any organic compound, this material may produce toxic carbon monoxide and carbon dioxide fumes among other organic compounds if heated to decomposition.

HAZARDOUS POLYMERIZATION: May Occur () Will Not Occur (X)

SECTION 5 - HEALTH HAZARD DATA

TOXICITY: Acute Oral LD50 (rat): 5,840 mg/kg
Acute Dermal LD50 (rabbit): 13,000 mg/kg
Acute Inhalation LC50 (rat): 12,000 mg/kg (8-hours)

CARCINOGEN LISTED BY: NTP Yes () No (X)
IARC Yes () No (X)

OSHA Yes () No (X)
Other Yes () No (X)

ROUTES OF ENTRY: Inhalation, ingestion, absorption.

SIGNS AND SYMPTOMS OF OVEREXPOSURE:

INHALATION: May cause irritation of the respiratory tract, headache, dizziness, mental depression, nausea, vomiting, narcosis, anesthesia, coma.

EYE CONTACT: May cause slight to severe irritation and damage to eye tissues.

SKIN CONTACT: May cause irritation.

INGESTION: Toxic by ingestion. May cause irritation of the gastro-intestinal tract, nausea, vomiting, headache, dizziness, depression, narcosis, anesthesia, coma. Ingestion of 100 ml has been fatal.

CHRONIC EFFECTS OF OVEREXPOSURE: Possible renal dysfunction or failure, damage to respiratory tract tissues.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: Persons with impaired lung function or asthma-like conditions may experience additional breathing difficulties if exposed to vapors. Persons with existing skin disorders may be more susceptible to skin irritation.

OTHER PRECAUTIONS TO CONSIDER: Persons developing hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

EMERGENCY FIRST AID PROCEDURES:

INHALATION: Remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.

EYE CONTACT: Flush immediately with water for at least 15 minutes and seek immediate medical attention.

SKIN CONTACT: Wash thoroughly with soap and water. If irritation persists or develops seek medical attention.

INGESTION: Flush mouth out with water and seek medical attention or contact a poison control center immediately. Do not leave victim unattended.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

RESPIRATORY PROTECTION: NIOSH/MSHA approved respirator.

PROTECTIVE GLOVES: Chemical resistant gloves.

EYE PROTECTION: Safety goggles. Avoid wearing contact lenses when working with this or any chemical due to the possibility of increased severity of eye damage.

VENTILATION: Local explosion-proof exhaust recommended.

OTHER PROTECTIVE EQUIPMENT: Appropriate laboratory apparel.

HYGIENIC WORK PRACTICES: Do not eat, drink or smoke near this material. Wash thoroughly after handling and wash any contaminated clothing before reuse.

SECTION 7 - HANDLING AND STORAGE PRECAUTIONS

HANDLING PRECAUTIONS: Avoid contact with eyes, skin or clothing and avoid breathing vapors. Wash thoroughly after handling and wash any contaminated clothing before reuse.

STORAGE PRECAUTIONS: Avoid exposure to heat, sparks, flame, and contact with oxidizing agents. Do not store or handle in aluminum containers at temperatures above 120°F.

SECTION 8 - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE OF SPILL OR DISCHARGE: Remove any ignition source and ventilate spill site. Wear all protective gear including: respirator, goggles, gloves, boots, etc. Mop up spillage with an absorbent material and place in a tight container. Wash spill site and remove contaminated absorbent materials. Wash thoroughly or shower after handling and wash all clothing and protective gear before reuse.

WASTE DISPOSAL METHOD: Dispose of in accordance with all applicable local, state, federal, and environmental regulations.

SECTION 9 - DISCLAIMER

The information contained in this Material Safety Data Sheet has been compiled from reliable sources and is believed to be correct as of the date issued. It is the responsibility of the user to determine the appropriateness and applicability to their situation. Paddock Laboratories, Inc. disclaims any expressed or implied warranty as to the accuracy of the above information and shall not be held liable for any direct, incidental, or consequential damages from use or reliance on the above information.

DEFINITIONS OF ABBREVIATIONS USED:

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Service
IARC: Internal Agency for Research on Cancer

IDLH: Immediately Dangerous to Life or Health level
LC₅₀: Median Lethal Concentration
LD₅₀: Median Lethal Dose
MSHA: Mine Safety and Health Administration
N/A: Not available
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TWA: Time Weighted Average

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Attachment to Material Safety Data Sheet

TRANSPORTATION INFORMATION

APPLICABLE DOT REGULATIONS: Title 49

SHIPPING NAME: Isopropanol

IDENTIFICATION NUMBER: UN1219

REPORTABLE QUANTITY: Yes (1 gallon per container).

LABELS:

One Gallon: "Flammable Liquid (3) Isopropanol UN1219"

One Pint: "ORM-D Consumer Commodity"

UNIT CONTAINER:

One Gallon: Natural, round, high density polyethylene bottle with a polyethylene coated paper on pulpboard lined white metal cap.

One Pint: Natural, oblong, pinched waist, polyethylene alcohol bottle with a foam-lined white polypropylene cap.

DOT SPECIFICATION CONTAINER:

Bottle: DOT 2E Carton: DOT 12-B

DOT EXEMPTION NUMBER: Not available.

DOD CERTIFICATION CONTROL NUMBER: Not available.

NET EXPLOSIVE WEIGHT: Not applicable.

LIMITED QUANTITY: No.

AEROSOL PROPELLANTS: Not applicable.

USPS REGULATIONS: Not available.

DISPOSAL INFORMATION

EPA HAZARDOUS WASTE NUMBER/CODE: Not listed.

HAZARDOUS WASTE CHARACTERISTICS: Flammable.

DISPOSAL METHODS: Incineration accordance with all applicable local, state and federal regulations.