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ISOPROPYL ALCOHOL

Material Safety Data Sheet

Mallinckrodt Chemical, Inc.
16305 Swingley Ridge Drive
Chesterfield, MO 63017

Emergency Telephone Number
314-539-1600

Effective Date: 04-06-89 Supersedes 07-13-87

PRODUCT IDENTIFICATION:

Synonyms: 2-propanol; sec-propyl alcohol; isopropanol

Formula CRS No.: 67-63-0

Molecular Weight: 60.10

Hazardous Ingredients: Isopropyl alcohol Chemical Formula: $(CH_3)_2CHOH$

PRECAUTIONARY MEASURES

WARNING! FLAMMABLE LIQUID. HARMFUL IF SWALLOWED OR INHALED. AFFECTS CENTRAL NERVOUS SYSTEM. CAUSES IRRITATION.

Keep away from heat, sparks and flame.
Keep container closed.
Use with adequate ventilation.
Avoid breathing vapor.
Wash thoroughly after handling.
Avoid contact with eyes, skin and clothing.

EMERGENCY FIRST AID

If swallowed, give water to drink. Induce vomiting if medical help is not immediately available. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. In all cases call a physician.
SEE SECTION 5.

Physical Data

SECTION 1

Appearance: Clear, colorless liquid.

Odor: Rubbing alcohol.

Solubility: Infinite in water.

Boiling Point: 82 C (180 F).

Vapor Density (Air=1):2.1

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Melting Point: -89 C (-128 F). Vapor Pressure (mm Hg):33 @ 20 C (68 F)

Specific gravity: 0.79 Evaporation Rate:(n-BUAC = 1) 2.83

NFPA Ratings: Health: 1 Flammability: 3 Reactivity: 0

Fire and Explosion

SECTION 2

Information-----
Fire:

Flammable Liquid Flashpoint: 12 C (53 F).
(closed cup). Autoignition temperature: 399 C
(750 F). Flammable limits in air, % by volume:
lcl: 2.0; ucl: 12.0.

Explosion:

Above flash point, vapor-air mixtures are
explosive within flammable limits noted above.
Contact with strong oxidizers may cause fire or
explosion.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or
carbon dioxide. Water spray may be used to keep
fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective
clothing and NIOSH-approved self-contained
breathing apparatus with full facepiece operated
in the pressure demand or other positive pressure
mode. Water may be used to flush spills away
from exposures and to dilute spills to
non-flammable mixtures. Vapors can flow along
surfaces to distant ignition source and flash
back.

Reactivity Data

SECTION 3

Stability:

Stable under ordinary conditions of use and
storage. Heat and sunlight can contribute to
instability.

Hazardous Decomposition
Products:

Toxic gases and vapors such as carbon monoxide
may be released in a fire involving isopropyl
alcohol.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Heat, flame, strong oxidizers, acetadehyde,
chlorine, ethylene oxide, hydrogen-palladium

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combination, hydrogen peroxide-sulfuric acid combination, potassium tert-butoxide, hypochlorous acid, isocyanates, nitroform, phosgene, oleum and perchloric acid.

Leak/Spill Disposal Information SECTION 4

Remove all sources of ignition. Ventilate area of leak or spill. Clean-up personnel require protective clothing and respiratory protection from vapors. Small spills may be absorbed on paper towels and evaporated in a fume hood. Allow enough time for fumes to clear hood, then ignite paper in a suitable location away from combustible materials. Contain and recover liquid for reclamation when possible. Larger spills and lot sizes can be collected as hazardous waste and atomized in a suitable RCRA approved combustion chamber, or absorbed with vermiculite, dry sand, earth or similar material for disposal as hazardous waste in a RCRA approved facility.

Ensure compliance with local, state and federal regulations.

Health Hazard Information SECTION 5

A. Exposure/Health Effects

- Inhalation: May cause irritation of the nose and throat. Exposure to high concentrations has a narcotic effect, producing symptoms of drowsiness, headache, staggering, unconsciousness and possibly death.
- Ingestion: May cause drowsiness, unconsciousness, and death. Gastrointestinal pain, cramps, nausea, vomiting, and diarrhea may also result. The single lethal dose for a human adult = about 250 mls (SAX Sixth Edition).
- Skin Contact: Has a defatting action of the skin that can cause irritation. May cause irritation with a stinging effect and burning sensation.
- Eye Contact: Vapors may irritate the eyes. Splashes may cause severe irritation, possible corneal burns and eye damage.
- Chronic Exposure: Prolonged contact with skin may cause mild irritation, drying, cracking, or contact dermatitis may develop.
- Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be

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more susceptible to the effects of the substance.

B. FIRST AID

- Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
- Ingestion: Give water to drink. Induce vomiting if medical help not is immediately available. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Skin Exposure: Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation develops or persists.
- Eye Exposure: Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

C. TOXICITY (RTECS, 1986)

Oral rat LD50: 5840 mg/kg. Skin rabbit LD50: 13 gm/kg. Inhalation rat LC50: 16000 ppm/8H. Mutation references cited Aquatic Toxicity rating TLM95: 1000-10 ppm.

Occupational Control Measures SECTION 6

- Airborne Exposure Limits: -OSHA Permissible Exposure Limit (PEL): 400 ppm (TWA), 500 ppm (STEL) -ACGIH Threshold Limit Value (TLV): 400 ppm (TWA), 500 ppm (STEL)
- Ventilation System: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.
- Personal Respirators (NIOSH Approved) If the TLV is exceeded a full facepiece chemical cartridge respirator may be worn, in general, up to the maximum use concentration specified by the respirator supplier. Alternatively, a supplied air full facepiece respirator or airlined hood

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may be worn.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and/or a full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

Storage and Special Information SECTION 7

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from oxidizing materials. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment.

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Addendum to Material Safety Data Sheet

REGULATORY STATUS

This Addendum Must Not Be
Detached from the MSDS
Identifies SARA 313 substance(s)

Any copying or redistribution of the MSDS
must include a copy of this addendum

Hazard Categories for SARA
Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
X	X	X		

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Product or Components of Product:	SARA EHS Sec. 302		SARA Sec. 313 Chemicals		CERCLA Sec. 103	RCRA Sec.
	RQ	TPQ	Name List	Chemical Category	RQ lbs	261.33
ISOPROPYL ALCOHOL (67-63-0)	No	No	Yes	No	No	No

SARA Section 302 EHS RQ:
Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:
Threshold Planning Quantity of Extremely Hazardous substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:
Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERCLA Sec. 103:
Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:
Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards or toxic under 40 CFR 261.33

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*** END OF REPORT ***