

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : ISOPROPANOL ALCOHOL (IPA)
Synonyms : Alcohol
Formula : (CH₃)₂CHOH
Synonyms : 2-Propanol; Di-methyl carbinol
Supplier Name: JN INT'L Resources in Semicon Technology Co.
20 H. Rodis st., BFRV, Talon 2,
Las Pinas City, 1740 Philippines
Telephone Nos.: (632) 7997838
Fax Nos.: (632) 8725368
E-mail: nikky@irs.com.ph

2. HAZARDS IDENTIFICATION

Agency (NFPA) Rating



Health	1
Flammability	3
Reactivity	0
Personal Protection	H

GHS Hazard Classification:

Information concerning particular hazards for human and environment:



Xi



F

R11 Highly flammable

R36 Irritating to eyes

R67 Vapours may cause drowsiness and dizziness.

GHS Hazard pictogram

GHS & CLP



Signal Word: *Danger*

H225 *Highly flammable liquid and vapor.*

H303 *May be harmful if swallowed.*

H315 *Causes skin irritation*

H318 *Causes serious eye damage*

H336 *May cause drowsiness or dizziness*

Potential Health Effects:

Effects of Single Acute Over exposure

Inhalation: High concentrations of vapor may cause central nervous system depression, with weakness, drowsiness and loss of consciousness
Vapor causes irritation of the respiratory tract, with coughing and chest discomfort.

Eye contact: Causes irritation, experienced as stinging discomfort or pain.
Corneal injury may occur.

Skin Contact: May cause minor irritation with itching and possible slight local redness. Prolonged or repeated contact may cause fating and drying of the skin.

Skin absorption: Exposure to small quantities is not expected to cause adverse health effects. Widespread or prolonged exposure may result in the absorption of harmful amounts of material, particularly in infants, leading to signs and symptoms and described for swallowing.

Swallowing: Slightly toxic. May cause dizziness, faintness, drowsiness, Decreased awareness and responsiveness, lack of coordination, Abdominal discomfort, nausea, vomiting and diarrhea.

Chronic Prolonged or Repeated Overexposure:

Effects of repeated overexposure: Prolonged or repeated skin exposure may cause deflating of the skin.

Other Effects of Overexposure: None currently known.

Medical Conditions aggravated by Exposure: Skin contact may aggravate an existing dermatitis.

3. COMPOSITION / INFORMATON ON INGREDIENTS

<u>NAME</u>	<u>CAS NO.</u>	<u>%</u>	<u>EC NO.</u>	<u>INDEX NO.</u>
Isopropanol	67-63-0	>99	200-661-7	603-117-00-0
Specification Grade/Class	B			
NIOSH Number	NT8050000			
OSHA PEL	400 PPM			
ACGIH TLV	400 PPM			
Recommended Limit	N/R			
NCR License Number	N/R			

4. FIRST AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomits.

EYE

- » If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

- » If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

- » Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. For acute or short term repeated exposures to isopropanol:
- Rapid onset respiratory depression and hypotension indicates serious ingestions that require careful cardiac and respiratory monitoring together with immediate intravenous access.
- Rapid absorption precludes the usefulness of emesis or lavage 2 hours post-ingestion. Activated charcoal and cathartics are not clinically useful. Ipecac is most useful when given 30 mins. post-ingestion.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical or alcohol foam

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive. When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 1000 meters in all directions.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidizers. Combustion products include: carbon dioxide (CO₂), other pyrolysis products typical of burning organic material. WARNING: Long standing in contact with air and light may result in the formation explosive peroxides.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.

MAJOR SPILLS

- Clear area of personnel and move upwind.
 - Alert Fire Brigade and tell them location and nature of hazard.
- Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

7. HANDLING AND STORAGE

HANDLING:

Precautions for safe handling – Keep receptacles tightly sealed.

Information about fire and explosion protection:

- Keep ignition sources away – DO NOT smoke.
- Protect against electrostatic charges

Recommended storage temperature: 15-25°C

STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.

Hazard Storage compatibility code F2-F3

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection	Use NIOSH/MSHA approved respirator
Ventilation	For organic vapors/mist if above pel/tlv
Protective Eye Protection	Explosion-proof vent equip
Other Protective Equipment	Chemical resistant gloves
	Goggles/ Face shield

Apron/over all, goggles, gas mask, gloves,



Work Hygienic Practices	Avoid contact with eyes and skin
	Do not breathe vapors/mist; wash thoroughly after each use

Supplemental Health/Safety Data
TT-1-735, GRADE B. MSDS DTD 8/81

9. PHYSICAL and CHEMICAL CHARACTERISTICS

Appearance/Odor	clear liquid, colorless, Alcohol odor
Flash Point (close cup)	Tag closed cup ASTM D56 12°C (53°F)
Flash Point (open cup)	Tag open cup ASTM D1310 17°C (63°F)
% by Volume Lower:	2.0% (V)
Upper:	12.7% (V)
pH	- value at 20°C: 7
Boiling Point	180°F/82°C
Vapor Pressure	172
Vapor Density	>1.0
Specific Gravity	0.787
Evaporation Rate	2.5 (N-But. Acetate=1)
Solubility in Water	complete
Percent Volatiles by volume	100
Temperature code	8

10. CHEMICAL STABILITY and REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

For incompatible materials - refer to Section 7 - Handling and Storage.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

- » Irritating to eyes.
- » HARMFUL- May cause lung damage if swallowed.
- » Vapour may cause dizziness or suffocation.
- » Vapour may cause drowsiness and dizziness.
- » Inhalation and/or ingestion may produce health damage*.
 - » * (Limited evidence).

CHRONIC HEALTH EFFECTS

- » Cumulative effects may result following exposure*.
- » * (Limited evidence).

TOXICITY AND IRRITATION

- » The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (non-allergic). This form of dermatitis is often characterized by skin redness (erythema) and swelling epidermis.

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

12. ECOLOGICAL INFORMATION

Volatile Organic compounds (P /G) 6.56

Volatile Organic compounds (G / L) 786.1428

13. DISPOSAL CONSIDERATIONS

- Recycle where possible Otherwise ensure that:
 - Licensed contractor's dispose of the product and its container.
- This material and its container must be disposed of as hazardous waste.

14. TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID

HAZCHEM: None

UNDG:

Dangerous Goods Class:	3 (F1)	Subrisk:	None
UN Number:	1219	Packing Group:	II
Shipping Name:	ISOPROPANOL (ISOPROPYL ALCOHOL)		

**Air Transport IATA:**

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	1219	Packing Group:	II
Special provisions:	None		
Shipping Name:	ISOPROPANOL		

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	1219	Packing Group:	II
EMS Number:	F-E,S-D	Special provisions:	None
Limited Quantities:	1L		
Shipping Name:	ISOPROPANOL (ISOPROPYL ALCOHOL)		

15. REGULATORY INFORMATION

EC Label Name	Isopropanol	
EC Classification	Highly flammable	
EC Symbols	F, Xi	
EC Safety	S7	Keep container tightly closed
	S16	Keep away from sources of ignition – NO SMOKING
	S24/25	Avoid contact with skin and eyes
	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

16. OTHER INFORMATION

For Industrial use only.

» The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

The information published in this Material Safety Data Sheet has been compiled from data in various technical publications. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. It is the user's responsibility to determine the suitability of this information for adoption of necessary safety precautions. We reserve the right to revise material Safety Data Sheets as new information becomes available. Copies may be made for non-profit use.

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