Safety Data Sheet

Isopropyl Alcohol

1. Identification of the substance or mixture and of the supplier

Trade Name	:	Isopropyl alcohol IPA, Isopropanol
Material Uses	:	Solvent for lacquers, Thinners, printing inks, adhesives, Raw material For used in pharmaceutical industry. This product is used antiseptics.
Supplier	:	SP PETROCHEMICAL SOLUTION CO.,LTD. 440/4-6 Prachacheun Rd. Bangsue Bangkok 10800 Thailand Telephone: +66 2 913 7999 (Auto 20 Lines) Fax: +66 2 586 0990-4
Website	:	www.srithanaperfect.com
E-mail	:	info@srithanaperfect.com

2. Hazards Identification

GHS Classification	:	Flammable liquids : Category 2 Eye irritation : Category 2 Specific target organ toxicity following single exposure : Category 3
Signal word	:	Warning
Health Hazard	:	Vapours may cause drowsiness and dizziness. Irritating to skin, eyes and respiratory system.
Environmental Hazard	:	Annex 1 substance under review by the EU commission.

GHS Pictogram :

GHS Hazard statements : H225 Highly flammable liquid and vapour.

: H319 Causes serious eye irritation.

: H336 May cause drowsiness or dizziness.

GHS Precautionary statements

Prevention	P210	Keep away from heat/sparks/open flames/hot surface and Non-smoking
	P233	Keep container tightly closed.
	P240	Ground/Bond container and receiving equipment.
	P241	Use explosion-proof electrical/ventilating/ lighting/equipment.
	P242	Use only non-sparking tools.
	P243	Take precautionary measure against static discharge.
	P261	Avoid breathe dust/fume/gas/mist/vapours/ spray.
	P264	Wash thoroughly after handling.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Wear protective glove/eye protection/face protection.
Response	<u>If on skin</u>	
	P303+P361 +P353	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
	P370+P378	In case of fire: Use manufacturer/supplier or the competent authority to specify appropriate media for extinction.

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	<u>If in eye</u>	
	P305+P351 +P338	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P337+P313	If eye irritation persists: Get medical advice/attention.
	<u>If inhaled</u>	
	P304+P340	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Storage	P403+P233	Store in a well-ventilated place. Keep container tightly closed.
	P235	Keep cool.
	P405	Store locked up.
Disposal	P501	Disposal should be in accordance with applicable regional, national,and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

Precautionary Pictograms

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3. Composition/ Information on ingredients

Chemical Name	:	2-Propanol
Common Name	:	Isopropyl alcohol,IPA
Synonyms Name	:	Propan-2-ol
CAS No.	:	67-63-0
UN No	:	1219
Molecular Weight	:	60.09
Molecular Formula	:	(CH3)2CHOH

4. First-aid measures

Inhalation	:	Remove to fresh air. If the victim has difficulty breathing or tightness of the chest, give 100% oxygen with rescue breathing or CPR as required and transport to the nearest medical facility.
Skin Contact	:	Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available.
Eye Contact	:	Immediately flush eyes with large amounts of water for at least 10 minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.
Ingestion	:	Immediately make victim drink plenty of water. Do not induce vomiting; Do not eat milk and castor oil, transport to nearest medical facility for additional treatment.

5. Fire –fighting measures

Suitable extinguishing media	:	Dry chemical powder,Alcohol-resistant foam and Carbon dioxide.
Specific hazard arising from	:	May produce toxic fumes of carbon monoxide, carbon dioxide the chemical if burning.
Special protective action for fire-fighters	:	Keep adjacent containers cool by spraying with water.
Protective Equipment.	:	Wear full protective clothing and self-contained breathing apparatus.

6. Accidental Release Measures

Protective Measures :

- Observe all relevant local and international regulations.
- Avoid contact with spilled or released material.Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see chapter 8 this Material Safety Data Sheet. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in thsurrounding area. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Clean-Up Methods

● Small spillage (< 200 LT)	:	Transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
● large spillage (< 200 LT)	:	Transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
Other Information	:	Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

7. Handling And Storage

Handling	:	Avoid contact with skin, eyes, and clothing. Do not breathe vapours. Extinguish any naked flame. Remove ignition sources. Avoid sparks. Do not smoke. The vapour is heavier than air spreads along theground and distant ignition is possible. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Do not use compressed air for filling, discharging, or handling operations. Handle and open container with care in well-ventilated area. Do not empty into drains.

Storage	:	Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat. Bulk storage tanks should be diked (bunded). Keep away from aerosols,flammables, oxidizing agents, corrosives. Storage Temperature : Ambient.
Product Transfer	:	Keep containers closed when not in use. Do not use compressed air for filling, discharging, or handling operations. If positive displacement pumps are used, these must be fitted with a nonintegral pressure relief valve. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Recommended Materials	:	For containers, or container linings use mild steel, stainless steel.
Additional Advice	:	Containers even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

8. Exposure Controls and Personal Protection

Exposure Standard : Occupational Exposure Limits

- TLV-TWA = 400 ppm (980 mg/m3)
- TLV-STEL = 500 ppm (1230 mg/m3)

Engineering Controls : Provide exhaust ventilation or other engineering controls to keep Workplace the airborne concentrations of vapours below their respective threshold limit value.

Respiratory Protection : Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hand Protection	:	Butyl rubber gloves, Nature rubber gloves, Neoprene rubber gloves, Nitrile rubber gloves.
Eye Protection	:	Chemical splash goggles (chemical monogoggles).
Other Protection	:	Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

9. Physical and Chemical Properties

Appearance	:	Clear liquid.
Odour	:	Specially odour
pH Value	:	No data available.
Boiling Point (oC)	:	82-83 ºC
Melting Point (oC)	:	- 88 ºC
Flash Point	:	12 ºC (Abel)
Evaporating Rate	:	3 (n-Butyl Acetate = 1)
Lower/Upper Flammability Limits	:	2 - 12 %V
Vapour Pressure (mmHg)	:	33 mmHg @ 20 ºC
Specific Gravity	:	0.786 @ 20 ºC (ASTM D4052)
Density (g/cm3)	:	0.784 - 0.787 @ 20 ºC (ASTM D4052)
Vapour Density	:	2.1 @ 20 ºC (air = 1)
Solubility in Water	:	Soluble complete @ 20 ºC (ASTM D1722)
Auto Ignition Temperature	:	399 o C

10. Stability and Reactivity

Chemical Reactivity	:	Stable under normal conditions
Stability	:	Stable under normal conditions.
Hazardous Polymerisation	:	No.
Conditions to Avoid	:	Heat, flame, spark and other ignition sources.
Materials to Avoid	:	Strong oxidizing agents and strong acids.
Hazardous Decomposition	:	Thermal decomposition is highly dependent on Productscconditions. Carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation. May form explosive peroxides.

11. Toxicological Information

Acute Toxicity

● LD50 Acute oral toxicity	:	5,045 mg/kg , (rat)
● LD50 Acute dermal toxicity	:	12,800 mg/kg , (rabbit)
● LC50 Acute Inhalation Toxicity	:	16,970 ppm/4 hours , (rat)
Skin Irritation	:	Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.
Eye Irritation	:	Irritating to eyes.
Respiratory Irritation	:	Inhalation of vapours or mists may cause irritation to the respiratory system and may cause drowsiness and dizziness.
Carcinogenicity	:	No data available.

12. Ecological Information

Acute Toxicity

- Fish : Low toxicity : LC50 > 100 mg/l
- Aquatic Invertebrates : Low toxicity : EC50 > 100 mg/l
- Algae : Low toxicity : IC50 > 100 mg/l
- Micro organisms : Low toxicity : IC50 > 100 mg/l

Mobility : Dissolves in water. If product enters soil, it will highly mobile and may contaminate groundwater.

Persistence / Degradability : Readily biodegradable.

Bio-accumulation : Not expected to bioaccumulate significantly

13. Disposal Considerations

Material Disposal : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classifications and disposal methods in compliance with applicable regulations.

Container Disposal : Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Refer to Section 7 before handling the product or containers. Residues may cause an explosion hazard. Do not puncture, cut or weld unclenaed drums. Send to drum recoverer or metal reclaimer.

Local Legislation	:	Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

14. Transport Information

Road/Rail Transport

ADR/RID

- UN. Number : 1219
- Class/Item : 3/3(b)
- Hazard Symbol : Flammable Liquid
- Proper Shipping Name : Isopropyl Alcohol
- Packing Group : II

Maritime Transport IMO

- UN. Number : 1219
- Class : 3.2
- Packing Group : II
- Hazard Symbol : Flammable Liquid
- Proper Shipping Name : Isopropyl Alcohol
- Marine Pollutant : No

Air Transport IATA/ICAO

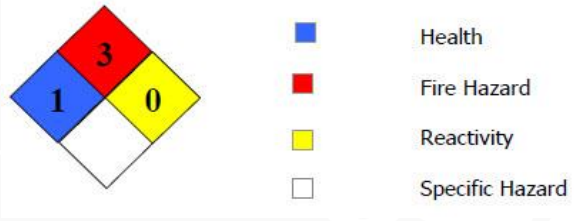
- UN. Number : 1219
- Class : 3
- Packing Group : II
- Hazard Symbol : Flammable Liquid
- Proper Shipping Name : Isopropyl Alcohol

15. Regulatory Information

EC Label Name	:	Isopropyl Alcohol
EC Classification	:	Highly Flammable
EINECS (EC)	:	200-661-7
EC Annex I Number	:	603-003-00-0
MITI (Japan)	:	2-207

16. Other Information

National Fire Protection Association (USA) :



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