Process Support Products

ISOPROPYL ALCOHOL

MATERIAL SAFETY DATA SHEET

Section 1: CHEMICAL PRODUCT AND COMPANY INFORMATION.

Product Name :	IPA Solution (Isopropyl Alcohol)
Company Name :	Halloa Enterprise Co., Ltd.
Address :	Fl. 9, No. 111-33, Sec. 4, San Ho Road, San Chung City, Taipei Hsien, 241 Taiwan, R. O. C.
Telephone Number :	(886) 2 2286 5678
Fax Number :	(886) 2 2286 9889

Section 2: COMPOSITION / INFORMATION ON INGREDIENTS.

Substance formal name :	Propan - 2 - ol
Substance chemical family :	Alcohol
Common name :	IPA
% Content:	50%
Synonyms :	Isopropanol, IPS, Dimethyl carbinol, Propanol, sec-
CAS Number :	67-63-0

Section 3: HAZARDS IDENTIFICATION.

Human health hazards :	Narcotic at high vapour concentrations.
Safety hazards :	Highly flammable. In use, may form flammable / explosive vapour / air mixture.
Environmental hazards :	Not classified as dangerous under EU criteria.

Section 4: FIRST AID MEASURES

Symptoms and effects :	Headache. Dizziness. Nausea. Narcosis. Dryness of the skin. Ingestion may cause inebriation and coma. Irritation of the skin, eyes and repiratory tract.
Eye contact :	Flush eye with water.If persistant irritation occurs, obtain medical attention.
Skin contact :	Wash promptly with soap and water if available. If persistent irritation occurs, obtain medical attention.
Inhalation :	Remove person to fresh air. If rapid recovery does not occur, obtain medical attention.
Ingestion :	DO NOT induce vomiting. If rapid recovery does not occur, obtain medical attention. Give water to drink, providing patient is concious.

Advice to physicians :	Dermatitis may result from prolonged or repeated exposure. Causes central nervous system depression.

Section 5: FIRE FIGHTING MEASURES.

Specific hazards :	Hazardous combustion products may include carbon monoxide. The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Extinguishing media :	Alcohol resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media :	Water in a jet.
Protective equipment :	Full protective clothing and self contained breathing apparatus.
Other information :	Keep adjacent containers cool by spraying with water.

Section 6: ACCIDENTAL RELEASE MEASURES.

Personal precautions :	Avoid contact with skin and eyes. Ventilate contaminated area thoroughly. Do not breathe vapour. Extinguish naked flames. Remove ignition sources. No smoking. Avoid sparks. Evacuate the area of all non-essential personnel. Shut off leaks, if possible without personal risk.
Personal protection :	Wear PVC, neoprene, or nitrile rubber gloves, PVC one-piece suit with integral hood, safety boots, rubber, knee length. Wear full face-piece respirator with organic vapour canister NPF 400. In a confined space, wear self-contained breathing apparatus open circuit type NPF 2000.
Environmental precautions :	Prevent contamination of soil and water. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Clean-up methods - small spillage :	Absorb or contain liquid qith sand, earth or spill control material. Shovel up and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum. Flush contaminated area with plenty of water. Retain washings as contaminated waste.
Clean-up methods - large spillage :	Transfer to a lebelled, sealable container for product recovery or safe disposal. Treat residues as for small spillage.
Other information :	Risk of explosion. Inform the emergency services if liquid enters surface water drains. Vapour may form an axplosive mixture with air. See section 13 for information on disposal.

Section 7: HANDLING & STORAGE.

Handling :	Avoid prolonged or repeated contact with skin. Extinguish any naked flames. Remove ignition sources. Avoid sparks. Do not smoke. Take precautionary measures against static discharges. Earth all equipment. Do not empty into drains.
Handling temperatures :	Ambient.
Storage :	Tanks should be fitted with a vapour recovery system. Keep away from direct sunlight and other sources of heat or ignition. Do not smoke in storage areas.

Keep container tightly closed and in a well ventilated place.

Storage temperatures : Ambient.

Product transfer : Take precautionary measures against static discharges. Earth all equipment. Avoid splash filling.

Recommended materials : For containers or container linings, use mild steel or stainless steel. For container paints, use zinc silicate. If diluted with de-ionised water, steel containers may be unsuitable.

Unsuitable materials : Most plastics, aluminium if > 50C, neoprene rubber.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION.

Engineering control measures : Use only in well - ventilated areas.

Occupational exposure standards :

Component Name	Limit type	Value	Unit	Other Information
Isopropyl alcohol	TLV / TWA	983	mg/m³	
	STEL	1230	mg/m³	

Respiratory protection : No specific measures.

Eye protection : Monogoggles.

Body protection : Standard issue work clothes. Safety shoes or boots - chemical resistant.

Section 9: PHYSICAL & CHEMICAL PROPERTIES.

Physical state :	Liquid at ambient temperature.
Colour :	Clear.
Odour :	Characteristic.
Initial boiling point :	82°C
Final boiling point :	83°C
Melting point :	-90°C
Vapour pressure :	4.3kPA @ 20°C
Density :	785 kg/m³ @ 20°C
Dynamic viscosity :	2.43 mPa.s @ 20°C
Vapour density (air = 1) :	2.0 @ 20°C
Conductivity :	6 pS/m x 10^6 @ 20°C
Flash point :	12°C (Abel)
Explosion limit - upper :	12% (v/v)
Explosion limit - lower :	2% (v/v)
Auto-ignition temperature :	425°C
Solubility in water :	Complete.
n-octanol / water partition coefficient :	< 3 log P_{OW}
Evaporation rate : (relative)	1.5 (n-Bu.Ac = 1)
Other properties :	Molecular Weight 60.10

Section 10: STABILITY & REACTIVITY.

Stability : Stable under normal conditions. Reacts with strong oxidising agents. Reacts with strong acids.

Conditions to avoid :	Heat, flames and sparks.
Materials to avoid :	Strong oxidising agents. Strong acids.
Hazardous decomposition products :	None Known.

Section 11: TOXICOLOGICAL INFORMATION.

Basis for assessment :	Information given is based on product data.
Acute toxicity - oral :	LD50 > 2000 mg / kg
Acute toxicity - dermal :	LD50 > 2000 mg / kg
Acute toxicity - inhalation :	LC50 > 5 mg / l
Eye irritation :	Slight irritant.
Skin irritation :	Slight irritant.
Respiratory irritation :	Irritant in animal studies.
Skin sensitisation :	May cause skin sensitisation.
(Sub) chronic toxicity :	Repeated exposure causes liver damage.
Human effects :	Repeated exposure can lead to allergic contact dermatitis. High exposures can cause drowsiness and dizziness. Can cause liver damage.

Section 12: ECOLOGICAL INFORMATION.

Basis for assessment :	Information is given on product data.
Mobility :	Dissolves in water. Lost within a day by evaporation and dissolution. Large volumes may penetrate soil and could contaminate groundwater.
Persistence / Degradability :	Readily biodegradable. Oxidises rapidly by photochemicals in air.
Bio-accumulation :	Does not bio-accumulate.
Acute toxicity - fish :	LC50 > 100mg/l
Acute toxicity - daphnia :	EC50 > 100mg/l
Acute toxicity - algae :	IC50 > 100mg/l
Acute toxicity - bacteria :	IC50 > 100mg/l
Sewage treatment :	Practically non-toxic, EC50 > 100 mg/l, to organisms in sewage treatment plants.
Other Information :	Poses a significant risk of oxygen depletion in aquatic systems.

Section 13: DISPOSAL CONSIDERATIONS.

Precautions :	Refer to section 7 before handling the products or containers.
Waste disposal :	Recover or recycle if possible. Otherwise incineration.
Product disposal :	Recover or recycle if possible. Otherwise incineration.
Container disposal :	Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Send to drum recoverer or metal reclaimer. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums.
Local legislation :	

Section 14: TRANSPORT INFORMATION.

US Number :	1219

UN Class / Packing Group :	3/II
UN Proper shipping name :	ISOPROPANOL (Isopropyl alcohol)
UN Number (sea transport, IMO) :	1219
IMO Class/Packing Group :	3.2/II
IMO Symbol :	Flammable Liquid
IMO Marine pollutant :	No
IMO Proper shipping name :	ISOPROPANOL (Isopropyl alcohol)
ADR/RID Class / Item :	3/3b
ADR/RID Symbol :	Flammable liquid
ADR/RID Kemler number :	33/1219
ADR/RID Proper shipping name :	ISOPROPYL ALCOHOL
UN Number (air transport, ICAO) :	1219
IATA/ICAO Class / Packing Group :	3/II
IATA/ICAO Symbol :	Flammable liquid
IATA/ICAO Proper shipping name :	ISOPROPANOL (Isopropyl alcohol)
Local regulations :	

Section 15: REGULATORY INFORMATION.

EC Label name :	Isopropanol	
EC Classification :	Highly flammable	
EC Symbols :	F	
EC Safety phrases :	S7	Keep container tightly closed.
	S16	Keep away from sources of ignition - no smoking.
EINECS (EC) :	200-661-7	
EC Annex I Number :	603-003-00-0	
MITI (Japan) :	2-207	
TSCA (USA) :	Listed	
AICS (Australia) :	Listed	
DSL (Canada) :	Listed	
National legislation :		

Section 16: OTHER INFORMATION.

Uses and restrictions :	Used in the manufacture of paints, household products and pharmaceuticals. Raw material for acetone and MIBK.
Core SDS history :	Edition No : 01 First Issue : 3 November 1997 Revised : (First Issue)
Revisions highlighted :	
SDS Distribution :	The information in this document should be made available to all who may handle th product.
Other information :	
References :	

Data are most known to Halloa at the time of preparation and are believed to be accurate. No warranty as to their accuracy or completeness is expre
implied.