Material Safety Data Sheet

ISOPROPYL ACETATE (IPAC)

Product Identification

Trade name: ISOPROPYL ACETATE (CAS No.: 108-21-4)

Details about the supplier:

CHEMEX ORGANOCHEM PVT LTD,
107, Udyog Kshetra, Link Road,
Mulund (West), Mumbai 400080.
Maharashtra, India.

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SECTION I – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SYNONAMES: 1-Methylethyl acetate, Isopropyl acetate, 1-methylethyl ester, 2-acetoxypropane, 2-propyl acetate.

USE : Isopropyl Acetate is used as a Solvent in chemical processes, in coatings, inks, cleaners, cosmetics,
Paints lacquers and printing inks; perfumery, insecticides and food flavorings.

SECTION II- HAZARD IDENTIFICATION

HAZARD CLASSIFICATION: Flammable liquid and vapor. Cause eye irritation. Harmful if inhaled. May cause respiratory tract irritation.

Vapors may drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking.

F: Highly Flammable
Xi: Irritant
R11: Highly flammable.
R36: Irritating to eyes.
R66: Repeated exposure may cause skin dryness or cracking.
R67: Vapors may cause drowsiness and dizziness.

GHS Classification.

Physical Hazard:	
Flammable liquid **Health hazards** Serious eye irritation Skin corrosion/Irritation **Health Hazard Summary:**	Category 1 Category 2 Category 2
Inhalation:	May cause drowsiness or dizziness
Eye contact:	Causes eye irritation
Skin contact:	Repeated exposure may cause skin dryness or cracking
Ingestion:	None known
Other Health Effects:	No data available
Environmental hazards:	None known
LABEL REQUIRMENT	
SIGNAL WORD	**DANGER**

HAZARD STATEMENT:

H225: Highly flammable liquid and vapors
H319: Causes serious eye irritation
H336: May cause drowsiness or dizziness

PRECAUTIONARY STATEMENT
P210: Keep away from heat / sparks/ open flames/ hot surfaces. – No smoking
P280: Wear protective gloves/protective clothing/eye protection/face protection
P233: Keep container tightly closed.
P242: Use only non Sparking tools.
P243: Take precautionary measurements against static discharge.

SECTION III – COMPOSITION/ INFORMATION ON INGREDIENTS

NAME	CAS RN	EC NO	Purity%
Isopropyl Acetate	108-21-4	203-561-1	99.8

SECTION IV- FIRST AID MEASURES

SKIN CONTACT: Immediately remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Physician. Transport to hospital, or doctor.

EYE CONTACT: Immediately hold eyelids open and rinse continuously

with running water. Continue flushing until advised to stop by the Physician, or for at least 15 minutes. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

INHALATION: Remove patient from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if breathing is difficult, if by mouth to mouth use rescuer protection (pocket mask etc,). Perform CPR if necessary. Take hospital, or doctor, without delay.

INGESTION: 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. Do not give anything by mouth to an unconscious person. If vomiting appears imminent or occurs, hold patient's head down; lower than their hips to help avoid possible aspiration of vomitus. Seek medical advice.

NOTE TO PHYSICIAN: Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION V - FIRE AND EXPLOSION HAZARD OF MATERIAL

FIRE EXTINGUISHING MEDIA: Liquid and vapours are flammable. Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result. Dry chemical fire extinguishers, Carbon dioxide. Water spray or fog - Large fires only. Alcohol resistant foams (ATC type) are preferred. Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

SPECIAL FIRE FIGHTING PROCEDURE: Alert Fire Brigade and inform about location and nature of hazard. May be violently or explosively reactive. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Consider evacuation (or protect in place). If safe, switch off electrical equipment until vapor fire hazard removed. Use water delivered as a fine spray to control fire and cool adjacent area. Avoid spraying water onto liquid pools. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.

UNUSUAL FIRE AND EXPOLSION HAZARDS: Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Forms an explosive mixture with air. Moderate explosion hazard when exposed to heat or flame. Vapor may travel a considerable distance to source of ignition. Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion, may emit toxic fumes of carbon monoxide (CO).

SECTION VI - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid breathing vapours and contact with skin and eyes. Control personal contact by using protective equipment.

ENVIRONMENT PRECAUTIONS: In case of minor spills, remove all ignition sources. Clean up all spills immediately. Contain and absorb small quantities with vermiculite or other absorbent material. Wipe up. Collect residues in a flammable waste container. In case of Major Spills, Clear area of personnel and move upwind.

CLEANING METHODS: Contain spilled material if possible. Collect in suitable and properly labeled container. Ground & bound all the containers and handling equipment. Pump with explosion proof equipment. Prevent runoff into drains. If contamination of drains or waterways occurs, advise emergency services.

SECTION VII- HANDLING AND STORAGE

HANDLING PROCEDURE: Keep away from heat, sparks and flame**.** Do not allow clothing wet with material to stay in contact with skin. Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. Avoid contact with incompatible materials. When handling, Do not eats, drink or smoke. Keep containers securely sealed when not in use.

Electrically bond & ground all containers, personnel and equipment before transfer or use of material. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storing and handling recommendations. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. Containers, even those that have been emptied, may contain explosive vapours.

Do not cut, drill, grind, weld or perform similar operations on or near containers. This product is a poor conductor of electricity and can become electrostatically charged, even in bonded or grounded equipment. If sufficient charge is accumulated, ignition of flammable mixtures can occur.

STORAGE REQUIREMENTS: Keep away from heat, sparks and flame .Store in original containers. Keep containers securely sealed. Store in a cool, dry, & well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storing and handling recommendations. Vent containers frequently, and more often in warm weather, to relieve pressure. Electrically earth all containers.

SECTION VIII- EXPOSURE CONTROL/ PERSONAL PROTECTIVE EQUIPMENT

Exposure Limits

Component	TWA (ACGIH)	STEL (ACGIH)
Isopropyl acetate	100 ppm	200 ppm

PERSONAL PROTECTION:

EYE PROTECTION: Safety goggles with side shields. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available.

HAND/ FEET PROTECTION: Glove selection is based on a modified presentation of the: "Forsberg Clothing Performance Index's of preferred glove barrier materials include: Butyl rubber. Polyethylene, Chlorinated polyethylene. Ethyl vinyl alcohol laminates ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene, Natural rubber ("latex"), Polyvinyl chloride ("PVC" or "vinyl"), Nitrile /butadiene rubber ("nitrile" or "NBR"). For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

RESPIRATORY PROTECTION: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there is no applicable exposure limit requirements or guidelines use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air purifying respirators: Organic vapor cartridge.

ENGINEERING CONTROLS: Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

- **PHYSICAL STATE:** Colorless Liquid
- **ODOUR:** Sweet Fruit like Odour
- **SOLUBILITY IN WATER (by weight):** 3 % @ 20 °C Literature
- **pH**: NA
- **BOILING POINT (760 mmHg):** 88.65 °C Literature
- **MELTING POINT:** Not applicable
- **FLASH POINT:** Closed Cup 2.2 °C (36 °F)
- **FLAMMABILITY:** Flammable Liquid
- **SPECIFIC GRAVITY (WATER=1):@** 20°C/20 °C 0.872 Literature **VISCOSITY (POISE):** NA
- **VAPOUR PRESSURE** @ 20 °C 6,070 Pa Literature
- **DENSITY:** 0.866-0.873 kg/m^3
- **MOLECULAR WEIGHT:** 102.13 g/mol Literature

SECTION X - STABILITY AND REACTIVITY DATA

- **CHEMICAL STABILITY:** Thermally stable at recommended temperatures and pressures.

- **INCOMPATIBILITY :** Avoid contact with alkali metal hydroxides, Nitric acid, Sodium hydroxide, Strong oxidizers.

- **HAZARDOUS POLYMERZAITION:** Hazardous polymerization will not occur.

- **CONDITIONS TO AVIOD:** Exposure to elevated temperatures can cause product to decompose.

- **THERMAL DECOMPOSITION PRODUCT:** Depends upon temperature, air supply and the presence of other materials mainly emits Carbon monoxide (CO), carbon dioxide (CO2), other pyrolysis products typical of burning organic material.

SECTION XI - TOXICOLOGICAL INFORMATION

ACUTE EFFECTS

SWALLOWED: Isopropyl acetate exhibits very low toxicity. No harmful effects are anticipated from swallowing small amounts. Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident.
Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

EYE: May cause severe eye irritation & corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness. Severe inflammation may be expected with pain. Prolonged eye contact may cause inflammation characterized by a temporary redness of the conjunctiva (similar to windburn).

SKIN: Prolonged contact may cause slight skin irritation with local redness. Prolonged or repeated exposure may lead to drying & flaking of skin. Skin contact is not thought to have harmful health effects; the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED: Inhalation of vapors or aerosols (mists, fumes), generated by the material during the course of normal handling may cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapors may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination & vertigo. Inhalation hazard is increased at higher temperatures.
The main effects of simple esters are irritation, stupor and

insensibility. Headache, drowsiness, dizziness, coma and behavioral changes may occur. Respiratory symptoms may include irritation, shortness of breath, rapid breathing, throat inflammation, bronchitis, lung inflammation and pulmonary oedema, sometimes delayed. Nausea, vomiting, diarrhea and cramps are observed. Liver and kidney damage may result from massive exposures

CHRONIC EFFECTS: Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

SECTION XII - ECOLOGICAL INFORMATION

ECOTOXICITY
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

DO NOT discharge into sewer or waterways

Biological oxygen demand (BOD):

BOD 5	**BOD 10**	**BOD 20**
12.7 - 61 %	39 - 72 %	40 - 76 %

Chemical Oxygen Demand: 1.67 mg/mg
Fish Acute & Prolonged Toxicity: LC50, fathead minnow (Pimephales promelas), 96 h: 400 mg/l
Aquatic Invertebrate Acute Toxicity: LC50, water flea Daphnia magna, 48 h: > 1,000 mg/l
Toxicity to Micro-organisms: IC50; bacteria, 16 h: > 1,000 mg/l

SECTION XIII - DISPOSAL INFORMATION

Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, and then puncture containers, to prevent re-use, and bury at an authorized landfill. Where possible retain label warnings and MSDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.. Recycle wherever possible. Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Dispose of by burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus.

SECTION XIV - TRANSPORTATION INFORMATION

Labels Required: FLAMMABLE LIQUID	 Flammable Liquid	 Irritant

HAZCHEM:	**3YE**		
Land Transport UNDG:			
Class or division:	**3**	**Subsidiary risk:**	**None**
UN No.:	**1220**	**UN packing group:**	**II**
Shipping Name: ISOPROPYL ACETATE			
Transport IATA:			
Hazard Class	**3**	**ICAO/IATA Subrisk:**	**None**
UN/ID Number:	**UN1220**	**UN packing group:**	**II**
Special provisions:	**None**		
Shipping Name: ISOPROPYL ACETATE			
Maritime Transport IMDG:			
IMDG Class:	**3**	**IMDG Subrisk**	**None**
UN Number:	**UN1220**	**Packing Group:**	**II**
Special provisions:	**None**		
Shipping Name: ISOPROPYL ACETATE			

SECTION XV - REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

U.S. Toxic Substances Control Act

All components of this product are either on the TSCA Inventory, are exempt from TSCA Inventor Requirements under 40 CFR 720.30, or comply with the PMN Polymer Exemption 40 CFR 723.250.

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

Isopropyl acetate (CAS: 108-21-4) is found on the following regulatory lists;

"GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD List of High Production Volume (HPV) Chemicals".

SECTION XVI - MISCELLANEOUS INFORMATION

DISCLAIMER: The data presented here is based on information we believe to be reliable but unknown risks may be present. We disclaim liability for damage or injury which results from the use of the above data and nothing contained therein shall constitute a guarantee or a warranty (including warranty of Merchantability or fitness for a particular purpose) or representation (including freedom from Patentability) by us with respect to the accuracy or completeness of the data, the product described or their use for any specific purpose as known to us. The final determination of the suitability of information, the manner of use of information or product and potential infringement of patents is the sole responsibility of the user.

ABBREVIATIONS USED: NA - NOT APPLICABLE, NH - NON HAZARDOUS, CI - CONTENT INSIGNIFICANT.
