Lee Chang Yung Chemical Industry Corporation

Isopropyl alcohol

Safety Data Sheet

2024.03.31 REVISED

I. Identification

Chemicals name: **Isopropyl alcohol**
Other Information: -
Relevant identified uses of the substance or mixture and uses advised against: Manufacture of acetone and derivatives; manufacture of glycerol and isopropyl acetate; solvents for aromatic and other oils, alkaloids, glue, resins; possible solvents for cellulose derivatives; coating solvent; anti-freeze agent for liquid fuel; enamel; extract processing; dehydrating agent; preservatives; lotion; denaturant.
Information on Producer/Supplier Name, Addresses, Phone: Linyuan Factory, LCY Chemical Corp / 29 S Commerce Dr., Casa Grande, AZ 85193/ 480-482-0786
Emergency Phone / Fax: 480 482 0786

II. Hazard Identification:

Hazard Category: Class 2 flammable liquids, Class 5 acute toxic substance (ingestion), Class 3 Specific target organ systematic toxicity - Single exposure, Class 2A severe injury/eye irritation substance
Labeled Contents: Symbols: Flames, Warning Warning: Danger Hazard Warning Information: Highly flammable liquid and vapor Harmful if ingested Causes slight skin irritation

Causes eye irritation Hazard Prevention Measures: Place container in a well-ventilated area Keep away from inflammables. – Smoking prohibited Prevent eye contact Do not dispose in drainage canals Prevent static electricity
Other Hazards: -

III. COMPOSITION OF MIXTURE

Single:

English Name: Isopropyl Alcohol
Synonyms: isopropanol, 2-Propanol, Dimethylcarbinol, Sec-Propyl Alcohol, Isopropanol
Chemical Abstracts Number (CAS No.): 67-63-0
Percentage for Chemical Ingredient (%): >99.9%

VI. First Aid Measures:

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell. . Skin Contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Seek medical attention if irritation develops and persists. Eye Contact: Immediately flush eyes with plenty of fresh water for at least 15 minutes. Remove contact lenses if present. Continue rinsing. Get medical attention if irritation develops and persists. Ingestion:

Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed: May cause drowsiness and dizziness. Headache, nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling and blurred vision. Indication of immediate medical attention and special treatment needed: Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim under observation, symptoms may be delayed. Major Disease and Harm Effect: Irritation. Exposure to large amounts can cause unconsciousness and death. General Information: Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved and take precacutions to protect themselves. Wash contaminated clothing before reuse.
First-Aid Personal Protection: Must wear Class C protective gear and perform emergency rescue in safe area.
Prompt to Doctor: -

V. Fire Fighting Measure:

Suitable Extinguishing Media: Water fog, alcohol resistant foam, carbon dioxide (CO_2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Unsuitable Extinguishing Media: Do not use water jet as an extinguisher, as this will spread the fire.
Special Exposure Hazards: 1. Vapors and liquids are flammable. Liquid will accumulate electric charges. Vapor is heavier than air and may float to places far away, and may flashback from ignition sources. 2. High heat will cause this material to decompose and produce toxic gas. The containers in a fire site may rupture and explode. ,
Special Extinguishing Procedure: 1. Retreat and extinguish the fire from a safe distance or a protected area. 2. Stay upwind to keep away from hazardous vapor and toxic decomposition. 3. Any leakage should be stopped before extinguishing the fire. If the leakage cannot be stopped and there is no immediate danger in the

surrounding area, allow it to burn away. If the leakage is not stopped before extinguishing the fire, the vapor and the air will form an explosive mixture and ignite afterwards. 4. Separate materials that are not on fire and protect the personnel. 5. Move the container away from the fire field under safe conditions. 6. Use water mist to cool the tanks or containers in exposed the fire field. 7. Using water fog to extinguish fire may be ineffective without trained fire-fighting personnel. 8. If the leakage is not ignited, spray water mist to disperse vapor and protect the personnel who try to stop the leakage. 9. A water spout is ineffective for extinguishing the fire. 10. For a big fire in a large area, use the unmanned water mist stand or the automatic water fire monitor. 11. Retreat from the fire field and allow the fire to burn out. 12. Stay away from the tanks. 13. When the safety valve alarm of the tank sounds or the color changes due to fire, retreat immediately. 14. Personnel without special protective equipment should not enter the fire field.
Special Protection Equipment: Fire fighters must wear air respirators, protective gloves, and fire fighting coats.

VI. Accidental Release Measures:

Personal Protection: 1. Before the polluted area is cleaned up completely, access to the area should be restricted. 2. Make sure the cleaning work is performed by trained personnel. 3. The personnel should wear appropriate personal protective equipment.
Environmental Protection: 1. The air in the area should be well ventilated. 2. All flammable sources should be extinguished or eliminated. 3. Report the accident to the safety, health, and environmental protection authorities of the government.
Methods for Cleaning Up: 1. Do not come in contact with the released chemical. 2. Avoid the released chemical from entering the sewers or sealed spaces. 3. Stop or reduce the leakage under safe conditions if possible. 4. Use soil, sand or similar inert non-combustible substances that will not react with the spill to surround the spill. 5. For small spills, absorb using an absorbent that will not react with the spill. The polluted absorbent becomes as harmful as the released chemical and should be placed in the appropriate container that is capped and labeled. Use water to clean up the leakage area. 6. For large spills, contact the fire department, emergency rescue units and supplier for assistance.

VII. Handling and Storage:

Precautions for Safe Handling:

Do not handle, store, or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation required when indoors. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids)or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges including but not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharge. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist/vapors. Avoid contact with eyes andavoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygienepractices.

For additional information on equipmentbonding and grounding, refer to the American Petroleum Institute (API)

Recommended Practice 2003, “Protection Against Ignitions Arising out of Static, Lightning, an d Stray Currents” or Nation Fire Protection Association (NFPA) 77, “RecommendedPractice on Static Electricity” or National Fire

Protection Association (NFPA) 70, “National Electrical Code”.

Storage:

1. Make sure that the passageways and exits are clear and unobstructed. 2. Consider the installation of leakage and fire detection systems, auto fire extinguishing system or enough usable emergency handling equipment in the storage area and operation area for large amounts. 3. Use containers made of compatible materials. Be careful to avoid spills during repacking. 4. Do not try to send out the material by adding pressure using air or inert gases. 5. Do not mix the material in the storage area unless this area is isolated with fireproof structure. 6. Use approved container and mixing equipment for flammable liquids. 7. Do not pour contaminated liquid back to the original storage tank. 8. Containers must be labeled, tightly sealed and kept from damages when not in use. 9. The chemical should be stored in cool, dry, and well-ventilated area away from direct sunlight. Keep away from heat sources, flammable sources, and incompatibles. 10. Storage equipment should be constructed with fire-resistant materials. 11. The floor should be constructed with impermeable material to avoid absorption by the floor. 12. Set up slopes, doorsills or furrows at doorways so that leaking substances are discharged to a safe place. 13. The storage area should have clear signs and be free from impediments. Only designated or trained personnel are allowed to enter. 14. The storage area and the work area should be separated. The chemical should be stored away from lifts, buildings, room entrances, or major accesses. 15. Appropriate fire extinguishers and leak clean-up equipment should be available near the storage area. 16. Containers should be checked for damages or leakage regularly. 17. All new containers should be checked for the appropriate labels and any damage. 18. The quantity of chemical to be stored should be limited. 19. The containers make from compatible materials should be used to

store the released chemical. 20. The storage tanks should be grounded and connected to other equipment at equivalent electric potential. 21. Tanks used for storing inflammable liquids must be installed with relief valve and vacuum relief valve. 22. The chemical should be stored at the temperature suggested by the chemical manufacturer or supplier. If necessary, the temperature detection alarm should be installed to alert if the temperature is too high or too low. 23. The storage of large quantities should be avoided. The chemical should be stored in the isolated fireproof building. 24. The exhaust pipes of tanks should be installed with flame arresters. 25. The storage tanks should be built on the ground level with the entire bottom sealed to prevent leakage. The liquid control dam able to hold the entire volume should be present in the surrounding area.

VIII. Exposure Control / Personal Protection:

Engineering Control:

1. Complete gas exchange or partial exhaust devices.
2. Will not produce sparks if used alone and grounded to the ventilation system.
3. Exhaust opening is connected directly outside the window.
4. Provide enough fresh air to supplement the air exhausted by the exhaust system.

Control Factor:

TWA	STEL	CEILING	BEIs
400 ppm	500 ppm	—	40mg/L （Acetone in urine）

Personal Protection Equipment:

Respiratory Protection: 1. Below 2000ppm: Fixed amount air supplied type respirator, respiratory respirator with organic vapor filter cartridge powered for air purification or full chemical filter cartridge, respirator with organic vapor filter cartridge, full self-contained or air supplied respirator.

2. Unknown Concentration: positive-pressure self-contained respiratory apparatus, positive-pressure full air-supply respiratory apparatus with positive-pressure self-contained respiratory apparatus.

3. Escape: Gas mask with organic vapor filter cartridge, life escape self-contained breathing apparatus.

Hand Protection: 1. Impermeable gloves made of butyl rubber, rubber-like, Viton, 4H, CPF 3, Responder, etc.

Eye Protection: 1. Anti chemical splashing safety goggles, full face masks

Skin & Body Protection: 1. Leak-proof gloves made of butyl rubber, rubber-like, Viton, 4H, etc.

Hygiene Procedures:

1. Polluted clothes should be removed as soon as the work is completed. The clothes should be worn or discarded only after being washed. The washing staff should be informed of the harmful effects of the pollution. 2. Eating, drinking, and smoking are strictly prohibited in the work area. 3. Wash hands thoroughly after handling the substance. 4. Keep the work area clean.

IX. Physical and Chemical Properties / Characteristics:

Appearance: Colorless liquid	Odor: Rubbery alcohol odor
Odor threshold: 3.3-610 ppm (detected), 7.6-49ppm (sensed)	Melting point: - 88.5
pH value:	Boiling Point / Boiling Range: 82.3℃
Flammability (solid, gas):	Flash Point: 12 ℃
Decomposition Temperature: -	Test Method: Close Cup
Spontaneous Temperature: 399 ℃	Exposure Limits: 2.0 %~12
Vapor Pressure: 33 mmHg @ 20℃	Vapor Density: 2.07
Specific Gravity：0.785	Solubility in Water: Completely soluble
Log Kow: 0.05	Percent volatile: 1.5 (n-Butyl Acetate = 1)

X. Stability and Reactivity:

Stability: Under normal stable condition, may slowly form into peroxides.
Special Conditions of Hazardous Reaction: 1. Strong oxidants (such as nitrates, perchlorates and peroxides): increased risks of fire and explosion. 2. Phosgene: produces isopropyl chlorocarbonate and hydrochloric acid. 3. Ferric salt: causes explosive heat decomposition reaction. 4. Hydrogen – Palladium: may catch fire if mixed in the air. 5. Strong acid: May cause violent reaction. 6. Alkali metals or alkali earth metals: may release flammable toxic gases.
Conditions to Avoid: Heat, sparks, static electricity, ignition sources, light
Incompatibility: Ferric salt, hydrogen – palladium, strong oxidizer, phosgene
Hazardous Decomposition Products: -

XI. Toxicological Information

Exposure route: skin contact, inhalation, ingestion, eye contact
Symptoms: Irritation, dizziness, narcosis, nausea, vomiting, diarrhea
Acute Toxicity: Skin: 1. Short period of exposure will not irritate skin. Inhalation: 1. Concentration of below 400 ppm will cause light irritation of the upper respiratory tract. 2. High concentration will cause dizziness, loss of motor functions (loss of coordination), and deep coma. Ingestion: 1. May cause dizziness, stomachache, painful cramps, nausea, vomiting and diarrhea. 2. Exposure to large amount will cause unconsciousness and death. 3. Estimated fatal dosage is about 131g. Eye: 1. Concentration of below 400 ppm will cause light irritation. 2. Direct contact of liquid with the eyes will cause acute irritation. LD50 (Test animal, absorption route): 4710mg/kg (rat, ingestion) LC50 (Test animal, absorption route): 16000ppm/8H (rat, inhalation)
Chronic: 1. Skin: Prolonged or frequent skin contact may cause dryness and peeling. ◦ 2. Ingestion: After daily ingestion of 6.4mg/kg isopropyl alcohol for 6 weeks, the blood and urine show no special changes in the chemical or cellular compositions.

3500ppm/7H (Female rats pregnant for 1-19 days, ingestion) causes incomplete development of the embryo.

IARC listed it as Group 3: Cannot be determined as carcinogenic in humans.

XII. Ecological Information:

Eco-toxicity: LC50 (Fish): -

EC50 (aquatic invertebrates): -

Bio-concentration Factor (BCF):

Durability and Degradability:

1. Results from 4 experiments showed that after 5 days (20) in the sewage, isopropyl alcohol can decompose 58% of the BOD theoretical value. 2. When released into water, it is expected to evaporate (estimated half-life is 5.4 days) and can be biodegraded (although it decomposed quickly in the laboratory but there is no relevant data in natural water sources). 3. When released into the air, it is expected to undergo photolysis (half-life is 1 to several days). Since it is water-soluble, it may be washed down by the rain.

Half-life (air): 6.2~72 hr

Half-life (water surface): 24~168 hr

Half-life (underground water): 48~336 hr

Half-life (soil): 24~168 hr

Biological Accumulation: Will not accumulate inside the body.

Fluidity in the Soil: When released into the soil, its high vapor pressure, faced with low adsorption from the soil, will cause it to evaporate quickly and seep into the ground.

Other adverse effects: Highly toxic to aquatic or marine life.

XIII. Disposal Information:

Disposal Information:

1. Bury in specified landfills or incinerate in approved solvent incinerators. 2. If small amounts flow into drainages or gutters, wash with large amounts of water to prevent the accumulation of flammable gases. 3. For large amounts report to the environmental protection unit.

XIV. Transport Information:

The United Nations Number (Un-No): 1219
UN Transport Name: Isopropyl alcohol
Transport Hazard Classification: Class 3 Flammable Liquids
Packaging Category: II
Marine Pollutant (Yes/No): No
Special Transport Way and Note: -

XV. Regulation Information:

U.S. FEDERAL REGULATIONS

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

TSCA Inventory Listing

Components 2-Propanol CAS-No. 67-63-0

All chemical substances in this product are either on the TSCA Active Inventory, or in compliance with the inventory.

SARA 302 Status

Components CAS-No. Weight percent

No chemicals in this material are subject to the reporting requirements of SARA TitleIII, Section 302.

SARA 311/312 Classification

Flammable liquids, Eye irritation, Specific target organ toxicity -single exposure

SARA 313 (TRI reporting)

Not regulated

US. EPA CERCLA Hazardous Substances (40 CFR 302)
Not listed
U.S. state regulations
Massachusetts Right to Know Components Isopropyl Alcohol CAS-No. 67-63-0 Revision Date 1987-01-01 Pennsylvania Right to Know Components Isopropyl Alcohol CAS-No. 67-63-0 Revision Date 1987-01-01 New Jersey Right to Know Components Isopropyl Alcohol CAS-No. 67-63-0 Revision Date 1987-01-01
California Proposition 65 –Califonria Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.
U.S. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit 22, 69502.3, subd. (a)) 2-PROPANOL (CAS 67-63-0)
CFATS –Not a COI, chemical of interest

XVI. Other Information:

Reference	1.CHEMINFO Database, CCINFO CD, 2005-3 2.RTECS Database, TOMES PLUS CD, Vol65, 2005 3.HSDB Database, 2017 4.ChemWatch Database, 2017	
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Note	This SDS version is intended for reference only	

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