Samchun Chemicals

Material Safety Data Sheet

2-Propanol

Section 1 – PRODUCT AND COMPANY IDENTIFICATION

1. Product Identifier 2-Propanol; Isopropanol; Isopropyl alcohol; IPA

2. Recommended Use & Uses advised against Uses for Laboratory and R&D only

3. Information of Supplier

SAMCHUN PURE CHEMICAL CO.,LTD
ADDRESS; (Mogok-dong) 117, Sandan-ro 16Beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea
Emergency Phone; 82-31-668-0700/3
Department; Safety & Environment dep.
Web site; http://www.samchun.com

Section 2 – HAZARDS and DANGER IDENTIFICATION

1.GHS Classification· Identification

Flammable liquid	Category2
Serious Eye Damage/Eye Irritation	Category2
Specific Target Organ Toxicity (Single Exposure)	Category1
Specific Target Organ Toxicity (Single Exposure)	Category3 -Narcotic effects
Specific Target Organ Toxicity (Single Exposure)	Category3 -Respiratory irritation
Specific Target Organ Toxicity (Repeated Exposure)	Category2
Reproductive toxic	Category2
Aspiration hazard	Category2

2. Label and Mark including Precautionary Statement

◦**Label elements**

◦**Signal word** Danger

◦**Hazard · Danger statement**

H225 Highly flammable liquid and vapour
H319 Causes serious eye irritation
H361 Suspected of damaging fertility or the unborn child
H370 Causes damage to organs (Central nervous system, kidney, systemic toxicity)
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H373 May cause damage to organs (Blood vessel, liver, spleen) through prolonged or repeated exposure
H305 May be harmful if swallowed and enters airways

◦**Precautionary statement**

Precaution	P210 Keep away from heat/sparks/open flames/hot surfaces. . No 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 measures against static discharge. P280 Wear protective gloves/protective clothing/eye protection/face protection P264 Wash ... thoroughly after handling. P201 Obtain special instructions before use P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P270 Do not eat, drink or smoke when using this product. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area.
Measures	P303+P361+P353 SKIN (or hair) all contaminated clothing IF ON Take off. Rinse skin with water / shower. P370+P378 In case of fire: Use (Section 5. explosions, according to the fire-fighting extinguishing agent suitable method) for extinction P305+P351+P338 IF IN EYES: 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. P308+P313 IF exposed: Call a POISON CENTER or doctor/physician P321 Specific treatment (see Seciton 4. on this label). P308+P311 If exposed or concerns, call a poison center or physician P312 Call a POISON CENTER or doctor/physician if you feel unwell. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P314 Get medical advice/attention if you feel unwell. P331 Do NOT induce vomiting. P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician P403+P235 Store in a well-ventilated place. Keep cool.
Storage	P405 Store locked up P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Dispose	P501 Dispose of contents/container under related law and regulations

3. Other Hazard-Risk which are not included in the classification criteria

NFPA index(0~4steps) : Health=2, Fire=3, Reaction=0

By the flow of a substance or mixture that also can cause static electricity

Section 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	Other Name	CAS No.	Content (%)
2-Propanol	Isopropanol	67-63-0	100

Section 4 – FIRST AID MEASURES

1. Eye Contact	Rinse with plenty of water for at least 15minutes and get medical attention immediately.
2. Skin Contact	Take off contaminated cloths and shoes immediately, wash with plenty of water and soap for at least 15minutes.
3. Inhalation	Move victim to fresh air. If breathing is difficult, give artificial respiration and get medical attention immediately.
4. Ingestion	Do not induce vomiting. Get medical advice/attention immediately.
5. Immediate medical attention and Notes for physician	Keep the medical personnel aware of the materials involved and take protective action. When ingested, consider gastric lavage and activated charcoal slurry administration

Section 5 – FIRE-FIGHT MEASURES

1. Suitable extinguish media	Alcohol resistant foam, carbon dioxide, Particulate powder extinguishing agent, water spray Inappropriate Extinguishing Media: No data
2. Special hazards arising from the substance	Pyrolysis products produce toxic smoke.
3. Special protective equipment and Precautions for fire-fighters	Move containers from fire area if you can do it without risk. When extinguishing a fire, be sure to wear personal protective equipment. If it is not possible to extinguish the fire, withdraw immediately. Keep containers cool by spraying with water for a long time, even after the fire is out. Isolate hazardous areas and deny access to people.

Section 6 – ACCIDENTIAL RELEASE MEASURES

1.Personal precautions and Emergency procedures	Do not touch spilled material. Avoid inhalation and skin contact. In case of confined space, wear air respirator and ventilate and remove all sources of ignition.
2. Environmental precautions	Minimize leak/spill, collect and keep leak/spill in container
3. Methods and material for containment and cleaning up	Soak up with sand, clay and other inert absorbent material

Section 7 – HANDING AND STORAGE

1. Precautions for safe Handling	Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. All containers should be grounded.
2. Conditions for safe storage	Grounding and equipotential grounding required, outdoor or in an isolated building. Store with flammable liquid. Keep separated from incompatible materials.

Section 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

1.Occupational exposure limit, biological exposure limit
National law of Safety management of
Occupational Health and Safety Act
-TWA : 200 ppm , 480 mg/m3
-STEL : 400 ppm , 980 mg/m3

2. Appropriate Engineering controls	Ensure compliance with applicable exposure limits and operate local exhaust ventilation when working. If the substance is at risk of explosion, ventilation equipment should be explosion-resistant.

3. Personal protective equipment

◦**Respiratory protection**	Because it is concerned about the harmfulness of human body due to chemical substances, it is recommended to wear respiratory protective equipment with dust mask or dust filter in consideration of physical and chemical characteristics when handling. Respiratory protection should be certified by the Health and Safety Authority. It is concerned about the harmfulness of the human body depending on the working environment, it should wear respirator, air-purifying respirator
◦**Eye-protection**	Wear safety glasses when handling as they may cause human health hazards due to chemicals. Install eye wash facilities and emergency eyewash stations near chemical handling sites
◦**Hand protection**	Wear safety gloves when handling, as it is likely to harm human health due to chemicals
◦**Skin and body proticion**	Wear chemical protective clothing when handling, as it is likely to harm human health due to chemicals

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

1.Physical state and color	Liquid(Colorless and transparent)	**2.Odor**	Alcohol odor
3.threshold	22ppm	**4. pH**	N/A
5.Melting/Freezing point	-90℃	**6.Boiling point/range**	80~83℃
7. Flashing point	11.7℃	**8. Evaporation speed**	1.7
9. Flammability(solid,gas)	N/A	**10. Flash or Explosion limit upper / lower**	12%/2%
11. Vapor pressure	43mmHg@20℃	**12. Solubility**	Soluble
13. Vapor density	2.1	**14.Gravity**	0.79
15. n-octanol-water Partition coefficient	0.05	**16. Self ignition temp(℃)**	456℃
17. Cracking temp(℃)	N/A	**18. Viscosity**	2.27mPa.s@20℃
19. Molecular Weight	60.1		

Section 10 – STABILITY AND REACTIVITY

1.Chemical stability and Possibility of Hazardous Reactions	Stable under normal temp. and pressure Not polymerize
2. Conditions to Avoid	Avoid heat, sparks, flames and other sources of ignition. Containers may rupture or explode if exposed to heat.
3. Incompatible Materials	Acids, metals, bases, peroxides, oxidants, combustible materials, metal salts, halogens
4. Hazardous Decomposition Products	Thermal decomposition products: Carbon oxides

Section 11 – TOXICOLOGICAL INFORMAION

1. Information on the likely routes of exposure.

N/A

2. Health hazard information

◦**Acute toxic**	Oral : LD50 5840mg/kg Rat Skin : LD50 16400mg/kg Rabbit Inhalation : Vapor LC50 > 10000ppm 6hr Rat
◦**Serious skin corrosive / irritation**	Rabbit skin irritation test result: Irritation of irritation or hardness was observed, but no irritation was observed as a result of human dynamics data
◦**Serious eye damage / irritation**	Irritation, inflammation, tears, corneal damage
◦**Respiratory sensitization**	N/A
◦**Skin sensitization**	Sensitization test results using guinea pig: negative Buehler-test results using guinea pig: No sensitization
◦ **Carcinogenicity**	Group 3 at IARC Classified into A4 in ACGIH
◦ **Germ cell Mutagenicity**	Results of sister chromosome replacement experiment using Chinese hamster V79 fibroblasts and mutation test using in vitro microorganism: 3.3, 10, 33.3, and 100 mmol / l, respectively, were negative regardless of the application of the metabolic activation system, and were negative in the micronucleus test using an in vivo mouse
◦ **Reproductive toxic**	NOEL Parental <500 mg/kg bw/day. NOEL F1, F2=400 mg/kg bw/day>

◦ **Reproductive toxic**	In the developmental toxicity and teratogenicity tests of RAT, no teratogenicity was observed, but there was toxicity such as decrease in body weight gain and anesthetic action, and reproductive toxicity such as decrease in pregnancy rate, increase in absorption rate and increase in fetal death were observed.
◦**Specific target organ toxicity (single exposure)**	Causes damage to organs (central nervous system, kidney, systemic toxicity). Acute toxicity Clinical symptoms are central nervous system depression, and the main symptoms are nausea, vomiting, reflexes and respiratory depression, and abdominal pain. In addition, there appears a mild irritant prayer is recognized in the human nose and throat
◦**Specific target organ toxicity (repeated exposure)**	Prolonged or repeated exposure may cause damage to organs (blood vessels, liver, spleen). Oral and inhalation repeated toxicity studies using RAT and mouse showed protein accumulation and tissue expansion of the renal proximal tubule No dose-dependent effects were observed, but only in a small number of animals.
◦**Aspiration hazard**	Cardiopulmonary dysfunction was observed within 24 hours of the intravenous administration of test rats, and the tie rate was around 1.6 1.6 mm2 / s, which may be respiratory harmful during aspiration.

Section 12 – ECOLOGICAL INFORMATION

1.Acquatic and Terrestrial eco toxicity	Fish toxicity : LC50 9640mg/l 96hr Pimephales promelas Invertebrate toxicity : LC50 5102mg/l 24hr Daphnia magna Sea algae : EC50 2.2mg/l 96hr
2.Persistence and degradability	Persistence : N/A Degradability : BOD5 / COD ratio ≥ 0.5, immediately biodegradable, EU Method C.5
3.Bioaccumulative potential	Biodegradability: (Produces biodegradation immediately EU Method C.5) Concentration: N/A
4.Mobility in soil	Log koc = 0.03
5.Other adverse effects	N/A

Section 13 – Disposable considerations

1.Waste methods	Dispose in accordance with local regulations.
2.Waste warning	Dispose prohibited substances and waste separately from others.

Section 14 – TRANSPORT INFORMATION

1. UN No.	1219
2.Proper shipping Name	Isopropanol
3.Hazard class	3
4.Packing group	Ⅱ
5.Marine pollutnat	N/A
6.Particular safety Measures for transportation	Fire emergency : F-E Emergency measures RELEASE : S-D

Section 15 – REGULATARY INFORMATION

1.Occupation safety and health acts	Standard material of exposure Test material of working environment (Test period; 6months) Hazardous material of administration objective Special diagnosis material of health (Diagnosis period; 12months)
2. Chemical Substances Control Act	Non-described
3. National law of Safety management of hazardous material	4 Class Alcohol 400 L
4.National law of management of Wastes	Designated Waste
5.Other domestic and foreign law	EU classification information (confirmed classification result): F; R11Xi; R36R67 EU classification information (Risk phrases): R11, R36, R67 EU classification information (Safety phrases): S2, S7, S16, S24 / 25, S26

Section 16 – OTHER INFORMATION

1. Material source	A chemical information MSDS Safety and Health Agency National Institute of Environmental Research Chemical Information Systems Korea Industrial Technology National Fire Hazardous Materials Information System
1. The 1st edition	2002.07.30
2. Revision and The final revision	12 / 2019.08.21

. Other references

* **The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.**