

Material Safety Data Sheet

Acetone


Section 1 – PRODUCT AND COMPANY IDENTIFICATION

1. Product Identifier	Acetone; Dimethyl ketone; 2-Propanone
2. Recommended Use & Uses advised against	Uses for Laboratory and R&D, Industrial 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
	Reproductive toxic	Category2
	Specific Target Organ Toxicity (Single Exposure)	Category3 - Respiratory tract irritation
	Specific Target Organ Toxicity (Single Exposure)	Category3 - Narcotic effects
	Specific Target Organ Toxicity (Repeated Exposure)	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 H335 May cause respiratory irritation H336 May cause drowsiness or dizziness H373 May cause damage to organs (CNS) 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

Precaution	<p>P264 Wash ... thoroughly after handling.</p> <p>P201 Obtain special instructions before use</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P260 Do not breathe dust/fume/gas/mist/vapours/spray.</p>
Measures	<p>P303+P361+P353 SKIN (or hair) all contaminated clothing IF ON Take off. Rinse skin with water / shower.</p> <p>P370+P378 In case of fire: Use (Section 5. explosions, according to the fire-fighting extinguishing agent suitable method) for extinction</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing</p> <p>P337+P313 If eye irritation persists: Get medical advice/attention.</p> <p>P308+P313 IF exposed: Call a POISON CENTER or doctor/physician</p> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P314 Get medical advice/attention if you feel unwell.</p> <p>P331 Do NOT induce vomiting.</p> <p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician</p> <p>P403+P235 Store in a well-ventilated place. Keep cool.</p>
Storage	<p>P405 Store locked up</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p>
Dispose	<p>P501 Dispose of contents/container under related law and regulations</p>

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

NFPA index(0~4steps) : Health=2, Fire=2, 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 (%)
Acetone	2-Propanone	67-64-1	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 and call a physician immediately.
5. Immediate medical attention and Notes for physician	Keep the medical personnel aware of the materials involved and take protective action.

Section 5 – FIRE-FIGHT MEASURES

1. Suitable extinguish media	<p>Extinguishing Media: Dry chemical, alcohol-resistant foam extinguishing agents, carbon dioxide, water spray</p> <p>Unsuitable extinguishing media: Non-described</p>
2. Special hazards arising from the substance	<p>Thermal decomposition products: oxides of carbon</p> <p>Fire and explosion hazards: Serious fire hazard exists. Steam or gas may be ignited from a distant source of ignition and may diffuse in an instant. Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air</p>
3. Special protective equipment and Precautions for fire-fighters	<p>Move containers from fire area if you can do it without risk. When extinguishing a fire, be sure to wear personal protective equipment.</p>

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 – ACCIDENTAL RELEASE MEASURES

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| 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 | Prevent further leakage or spillage and store in container.
Use appropriate containment to avoid environmental contamination.
Put on sand, earth or other appropriate barrier to prevent spreading or entering into drains, ditches or rivers. |
| 3. Methods and material for containment and cleaning up | Absorb spilled material with sand, clay, and other adsorbents. |

Section 7 – HANDLING AND STORAGE

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| 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 (Including conditions to avoid) | Grounding and equipotentiality is required. Keep outdoors or in an isolated building.
Store with flammable liquids. Separate from incompatible substances. |

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:500ppm, 1188mg/m³

-STEL:750ppm, 1782mg/m³

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| 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 protection | 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(Transparency)	2. Odor	Ether or peppermint odor
3. threshold	24~1615mg/m ³	4. pH	N/A
5. Melting/Freezing point	-95°C	6. Boiling point/range	56°C
7. Flashing point	-20°C	8. Evaporation speed	N/A
9. Flammability(solid, gas)	Non-described	10. Flash or Explosion limit upper / lower	12.8% ~ 2.5%
11. Vapor pressure	180mmHg(20°C)	12. Solubility	1000g/l
13. Vapor density	2	14. Gravity	0.7899

15. n-octanol-water Partition coefficient -0.24
 17. Cracking temp(°C) N/A
 19. Molecular Weight 58.1

16. Self ignition temp(°C) 465
 18. Viscosity 0.426 mm²/s(40°C)

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.

3. Incompatible Materials Acid, amine, halogen, halo-carbon compound, an oxidizing agent, a metal salt, peroxide, combustible materials, bases, chloroform, bromoform

4. Hazardous Decomposition Products Thermal decomposition products: oxides of carbon

Section 11 – TOXICOLOGICAL INFORMATION

1. Information on the likely routes of exposure.

If inhaled, no specific effects due to respiratory irritation, nasal cavity, bronchial irritation, ingestion were observed. It is unlikely to irritate when in contact with skin.

2. Health hazard information

◦Acute toxic

Oral : Rat: LD50 = 5800 mg/kg
 Skin : Rabbit LD50 > 7400 mg/kg
 Inhalation : Vapor LC50 76mg/l 4hr Rat

◦Serious skin corrosive / irritation

Although skin irritation appeared in the human body, it is recovered after 72 hours. There are moderately irritating or not irritating effects on rabbits, but acetone is not skin irritant in early OECD risk assessments.

◦Serious eye damage / irritation

May cause eye irritation, tears, irritation, corneal damage

◦Respiratory sensitization

N/A

◦Skin sensitization

No skin sensitization on mice and guinea pigs

◦Carcinogenicity

US EPA group D, ACGIH A4

◦Germ cell Mutagenicity

Non-described

◦Reproductive toxic

Rats exposed high concentration (11000ppm (20mg / L)) caused mild symptoms of toxicity, decreased fetal weight at a high concentration of exposed mice (6600ppm (15.6mg / L)) in reduced fetal weight, fetal absorption increases reviews (EHC, 207 (1998))

◦Specific target organ toxicity (single exposure)

In humans, nose, airway, bronchial irritation, high concentration exposure causes headache, dizziness, exhaustion of legs, syncope. Based on the effects of respiratory, nasal, and bronchial stimulation of human and mouse exposed to acetone, it can be classified into Category 3 (respiratory stimulation).

It is classified as Category 3 (anesthesia) based on the central nervous system effects such as drowsiness in the human body, headache, dizziness, and temporary loss of consciousness.

◦Specific target organ toxicity (repeated exposure)

Prolonged or repeated exposure may cause central nervous system disorders. Increased leukocyte, eosinophil and decreased neutrophil phagocytosis in humans have been reported.

◦Aspiration hazard

May be harmful if swallowed and enters airways.
 The estimated viscosity: 0.426 mm²/s

Section 12 – ECOLOGICAL INFORMATION

1. Aquatic and Terrestrial eco toxicity	Fish toxicity : 96hr-LC50(Salmo gairdnerii)=5,540mg/L(Directive 84/449/EEC C.1) Invertebrate toxicity : 48hr-EC50(Daphnia magna)=15,800mg/L Sea algae : 72hr-ErC50(Selenastrum capricornutum)=7000mg/L
2. Persistence and Degradability	Persistence : Predicted low persistence because logKow is less than 4 (LogKow = -0.24) Degradability : Waiting is not expected to hydrolysis and photolysis due to physicochemical properties: half-life = 32 days
3. Bioaccumulative potential	Hazardous to the aquatic environment (chronic): Not classified This is rapidly degraded in vivo and has low potential for bioconcentration. Biodegradable: The degradability 78% after 28 days is decomposed (OECD 301D) St. concentrated: BCF = 0.69 (estimated)
4. Mobility in soil	Low potential for soil accumulation Mobility in soil being the estimate of 0% (less likely to move into the soil), Fugacity level I Koc = 2.36 (EPISUITE)
5. Other adverse effects	N/A

Section 13 – Disposable considerations

1. Waste methods	Incinerate. Evaporate, concentrate and incinerate the residue. After purification by separation, distillation, extraction and filtration, the residue should be incinerated. Treat using neutralization, oxidation, reduction, polymerization, condensation reactions. The residues should be incinerated or re-treated by coagulation, sedimentation, filtration, dehydration and incinerate the residue.
2. Waste warning	Dispose prohibited substances and waste separately from others.

Section 14 – TRANSPORT INFORMATION

1. UN No.	1090
2. Proper shipping Name	Acetone
3. Hazard class	3
4. Packing group	II
5. Marine pollutant	Non-described
6. Particular safety Measures for transportation	Keep away from incompatible materials. Keep container tightly closed to prevent leakage of liquid.

Section 15 – REGULATORY 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) Process safety management(PSM) Substances Subject
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2. Chemical Substances Control Act	to Submission
3. National law of Safety management of hazardous material	Non-described
4. National law of management of Wastes	4 Class 1 Petroleum Water-soluble 400L
5. Other domestic and foreign law	Designated Waste, Other waste organic solvents EU classification (Classification) F; R11Xi; R36R66R67 EU classified information (risk phrases) R11, R36, R66, R67 EU classified information (safety phrases) S2, S9, S16, S26, S46

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 1 st edition	2002.07.30
2. Revision and The final revision	14 / 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.