Samchun Chemicals

Material Safety Data Sheet

Acetic anhydride

Section 1 – PRODUCT AND COMPANY IDENTIFICATION

1. Product Identifier — Acetic anhydride; Acetic oxide,acetic; Acetyl acetate

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	Category3
Acute toxic(Oral)	Category4
Acute toxic(Inhalation)	Category4
Serious Eye Damage/Eye Irritation	Category1
Skin Corrosion/Skin Irritation	Category1
Specific Target Organ Toxicity (Single Exposure)	Category1
Specific Target Organ Toxicity (Repeated Exposure)	Category1

2. Label and Mark including Precautionary Statement

◦**Label elements**

◦**Signal word** — Danger

◦**Hazard · Danger statement**

H226 Flammable liquid and vapour
H302 Harmful if swallowed
H332 Harmful if inhaled
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage
H370 Causes damage to organs (Lungs, central nervous system, bronchi)
H372 Causes damage to organs (Respiratory system) through prolonged or repeated exposure

◦**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.
P270 Do not eat, drink or smoke when using this product.

Precaution	P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. P260 Do not breathe dust/fume/gas/mist/vapours/spray.
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 P330 Rinse mouth. P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. 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. P310 Immediately call a POISON CENTER or doctor/physician. P321 Specific treatment (see Seciton 4. on this label). P363 Wash contaminated clothing before reuse. P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P308+P311 If exposed or concerns, call a poison center or physician P314 Get medical advice/attention if you feel unwell.
Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up
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=2, Reaction=1

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 (%)
Acetic anhydride	Acetic oxide	108-24-7	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.

Section 5 – FIRE-FIGHT MEASURES

1. Suitable extinguish media	Powdered fire extinguisher, foam fire extinguisher, alcohol-resistant foam Inappropriate extinguishing media: N/A
2. Special hazards arising from the substance	Thermal decomposition products: Carbon oxides
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. Use explosion-proof equipment.
2. Conditions for safe storage	Keep container tightly closed in a dry, cool and well-ventilated place. Keep away from incompatible materials. Store with flammable liquid.

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: C 5ppm, C 20mg/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 canister mask or gas 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(transparent, Colorless)	**2.Odor**	Vinegar odor
3.threshold	N/A	**4. pH**	3 (10g/l aq. sol(20℃))
5.Melting/Freezing point	-73.1℃	**6.Boiling point/range**	140℃
7. Flashing point	54℃	**8. Evaporation speed**	N/A
9. Flammability(solid,gas)	N/A	**10. Flash or Explosion limit upper / lower**	12% / 2%
11. Vapor pressure	5mbar@20℃	**12. Solubility**	React
13. Vapor density	3.52	**14.Gravity**	1.087
15. n-octanol-water Partition coefficient	N/A	**16. Self ignition temp(℃)**	316℃
17. Cracking temp(℃)	N/A	**18. Viscosity**	0.91mPa.s@20℃
19. Molecular Weight	102.09		

Section 10 – STABILITY AND REACTIVITY

1.Chemical stability and Possibility of Hazardous Reactions	Contact with water or moisture generates flammable or toxic gases and vapors. Do not polymerize.
2. Conditions to Avoid	Avoid contact with combustible materials. Keep in a dry place. Hazardous gases may accumulate in confined spaces. Keep away from waterworks and sewers.
3. Incompatible Materials	Acids, amines, combustible materials, oxidants, peroxides, bases, moisture, alcohols, metals
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 630 mg/kg Rat Skin : LD50 4000 mg/kg Rabbit Inhalation : LC50 1000 ppm 4 hr Rat
◦**Serious skin corrosive / irritation**	Skin irritation test results in rabbits: Moderate irritation
◦**Serious eye damage / irritation**	Eye irritation test results in rabbits: Moderate irritation
◦**Respiratory sensitization**	N/A
◦**Skin sensitization**	N/A
◦ **Carcinogenicity**	N/A
◦ **Germ cell Mutagenicity**	Micronucleus test using red blood cells in white rat: negative
◦ **Reproductive toxic**	N/A
◦**Specific target organ toxicity (single exposure)**	Pulmonary edema was observed in humans. At high concentrations, central nervous system depression appears Severe irritation of the airways can cause nasal mucosal ulcers and bronchospasm
◦**Specific target organ toxicity (repeated exposure)**	Inhalation exposure test for 13 weeks using white rats showed respiratory effects
◦**Aspiration hazard**	N/A

Section 12 – ECOLOGICAL INFORMATION

1.Acquatic and Terrestrial eco toxicity	Fish toxicity : LC50 265mg/l 48hr Invertebrate toxicity : LC50 55mg/l 24hr Sea algae : EC50 395mg/l 48hr
2.Persistence and degradability	Persistence : N/A Degradability : N/A
3.Bioaccumulative potential	Bioaccumulative : Biodegradable : 74%
4.Mobility in soil	log Kow = -0.58 (8)
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.	1715
2.Proper shipping Name	Acetic anhydride
3.Hazard class	8(3)
4.Packing group	Ⅲ
5.Marine pollutnat	N/A
6.Particular safety Measures for transportation	Fire emergency : F-E Emergency measures RELEASE : S-C

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 2 Petroleum Water-insoluble liquid 1000L
4.National law of management of Wastes	Designated Waste
5.Other domestic and foreign law	EU classification information (confirmed classification result): R10Xn; R20 / 22C; R34 EU classification information (Risk phrases): R10, R20 / 22, R34 EU classification information (Safety phrases): S1 / 2, S26, S36 / 37/39, S45

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	6 / 2019.01.03

. Other references

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