



العالمية للأسيتيل

International Acetyl Company

Safety Data Sheet

According to Regulation (EC) No. 1272/2008, Regulation (EC) 1907/2006

1. Identification of the substance/mixture and of the responsible company

1.1. Product Identifier: ACETIC Anhydride (C₄H₆O₃)

Acetanhydride; Acetic Acid Anhydride; Acetic Acid, Anhydride; Acetic Acid, Anhydride (9CL); Acetic Anhydride; Acetic Oxide; Acetic Oxide Anhydride; Acetyl Anhydride; Acetyl Ether; Acetyl Oxide; Anhydrid Kyseliny Octove; Anhydride Acetique; Anidride Acetica, Azijnzuuranhydride; Essigsaeureanhydrid, Ethanoic Anhydrate; Ethanoic Anhydride; Octowy Bezwodnik

1.2. Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: Organic Synthesis: Acetylating, dehydrating and bleaching agent; manufacture of Cellulose acetate fibers, plastics, vinyl acetate, pharmaceuticals, magnetic tape, photographic films, and cigarette filters; as an esterifying agent for food starch (5% maximum); as an acetulizer in examining wool fat, glycerol, fatty and volatile oils, resins; or in the detection of rosin.

1.3. Details of the supplier of the safety data sheet:

International Acetyls Company (IAC)
PO Box 12021
Post Coe 31961
Jubail Industrial City
Kingdom of Saudi Arabia

Website: www.sipchem.com/en/affiliates3.htm

1.4. Emergency telephone number: 00966-359 9985 (24 hours)

2. Hazards Identification

Acetic Anhydride CAS 108-24-7 Purity: 99.5% minimum

Trace Impurities: Acetic Acid – 0.5% Maximum, Heavy Metals as Pb – 2 PPM Max, Propionyl Content – 200 PPM Max., Butyryl Content – 30 PPM Max, Sulfates – 1 ppm Max, Iron – 1 ppm Max., Non –Volatile Matter–0.005 g/100 ml Max.

2.1. Classification of the substance or mixture:

Classification of Labeling in accordance with the CLP Regulations:

Index No	International Chemical Identification	EC No	CAS No	Classification		Labeling			Specific Conc. Limits, M-factors	Notes
				Hazard Class and Category Code(s)	Hazard statement Code(s)	Pictogram Signal Word Code(s)	Hazard Statement Code(s)	Suppl. Hazard statement Code(s)		
607-008-00-9	203-564-8	203-564-8	108-24-7	H226 H302 H332 314	R10 Xn,R20/22 C,R34	GHS02 GHS05 GHS06			100%	

Classification according to Regulation 1272/2008/EC (CLP)**Basis for Classification** This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation, GHS)**ACETIC ANHYDRIDE (108-24-7) Symbol(s):****Signal Word:** Danger**Hazard(s):**

- H226:** Flammable liquid and vapor
- H302:** Harmful if swallowed
- H332:** Harmful if inhaled
- H314:** Causes severe skin burns and eye damage

Prevention:

- P233:** Keep container tightly closed.
- P210:** Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- 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.
- P271:** Use only outdoors or in a well-ventilated area.
- P280:** Wear protective gloves/protective clothing/eye protection/face protection.
- P260:** Do not breathe dust/fume/gas/mist/vapors/spray.
- P264:** Wash ... thoroughly after handling.
- P270:** Do not eat, drink or smoke when using this product.

Response:

- P304+P340:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P312:** Call a POISON CENTER or doctor/physician if you feel unwell.
- P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310:** Immediately call a POISON CENTER or doctor/physician.
- P303+P361+P353:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P363:** Wash contaminated clothing before reuse.

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P321: Specific treatment (see ... on this label).

P330: Rinse mouth.

P370+P378: In case of fire: Use ... for extinction.

Storage:

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents/container to ...

SAFETY DATA SHEET

Emergency overview: DANGER! FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. CAUSES SEVERE SKIN AND EYE BURNS. MAY BE FATAL IF INHALED. HARMFUL IF SWALLOWED.

Potential chronic health effects:

CARCINOGENIC EFFECTS: ACGIH: A4 - Not Classifiable as a Human Carcinogen

MUTAGENIC EFFECTS: No known significant effects or critical hazards.

REPRODUCTION TOXICITY: No known significant effects or critical hazards.

2.2. Label: See table above.

2.3. Other hazards: None known.

3. Composition/information on ingredients

Formula	C4H6O3
CAS-No.	108-24-7
Index-No.	607-008-00-9
EC-No.	203-564-8

4. First Aid Measures

4.1. Description of first aid measures

Eye Contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: Wash out mouth and water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed:

Skin and eye burns, corrosion. Respiratory arrest. vomiting, gastrointestinal disorders. Shock. Risk of blindness.

4.3. Indication of immediate medical attention and special treatment needed:

No additional information available.

5. Firefighting measures

General fire hazards: Combustible liquid and vapor. USE WATER WITH CAUTION. Material reacts with water.

5.1. Extinguishing media

Suitable extinguishing media: Use dry chemical, CO₂, water spray (fog) or foam

Unsuitable extinguishing media: Do not use a water jet. Use caution with water and/or foams as the agents may react with acetic anhydride liberating acidic gases and vapors.

5.2. Special hazards arising from the substance or mixture:

Combustible. In a fire or if heated, a pressure increase will occur and the container may burst, with risk of subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Acidic gases formed. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

5.3. Advice for fire fighters:

Special protective equipment for fire fighters: Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Further information: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving an personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Do not allow fire extinguishing water to contaminate surface or groundwater systems.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

Advice for non-emergency personnel: Evacuate the danger zone; follow emergency precautions. Secure emergency assistance immediately. Avoid contact with the material; do not breathe vapors or aerosol. If possible, provide additional ventilation.

Advice for emergency responders: Do not take action without proper training and emergency equipment. See Section 8 for additional information. Evacuate surrounding areas. Eliminate all ignition sources including flares and all open flames. Avoid all contact with spillover material. Maintain adequate ventilation and wear appropriate respiratory protection.

6.2. Environmental precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. Methods and materials for containment:

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, surface waters, basements or confined areas. Wash spillage into effluent treatment plant. Contain and collect spillage using appropriate personal protective equipment. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products or if a risk assessment indicates this is necessary. Collect and contain spillage with non-combustible, absorbent material (e.g. sand, earth, vermiculite or diatomaceous earth) and place in a container for disposal according to local regulations. Use spark-proof tools and explosion proof equipment. Contaminated absorbent material may pose the same hazard(s) as the spilled product.

6.4. Reference to other sections:

See disposal instruction 13 and exposure controls Section 8.

7. Handling and storage

7.1. Precautions for safe handling:

Observe all label precautions. Use appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and

smoking. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on protection against fire and explosion: Keep away from flames and sources of ignition – including static.

7.2. Conditions for safe storage, including any incompatibilities:

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3. Specific end uses:

No other additional special end uses are anticipated.

8. Exposure controls/personal protection

8.1. Control parameters:

Personal, workplace or environmental monitoring may be necessary to ensure exposures are below recommended and legal limits.

Exposure limits:

Component Exposure Limits

ACETIC ANHYDRIDE (108-24-7)

ACGIH: 1 ppm TWA 3 ppm STEL

NIOSH: 5 ppm Ceiling; 20 mg/m³ Ceiling; 200 ppm IDLH

OSHA (US): 5 ppm TWA; 20 mg/m³ TWA

Mexico: 5 ppm TWA LMPE-PPT; 20 mg/m³ TWA LMPE-PPT

Exposure Limits for Chemicals which may be generated during processing

This material has no components listed.

8.2. Exposure controls:

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Engineering measures: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures:

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Discard contaminated clothing or wash thoroughly before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is required.

Glove material: butyl rubber
Glove thickness: 0.7 mm or thicker
Break through time: > 240 minutes

Other protective equipment: Flame retardant antistatic protective clothing

Respiratory protection: A properly fitted air purifying respirator or air supply respirator should be worn if a risk assessment indicates that respiratory protection is necessary. Respirator selection must be based upon known or measured levels of exposure.

Environmental exposure controls: Ventilation and engineering controls to protect workers and ventilate work area to at or below recommended employee exposure levels. Technical measures are preferred over use of personal protective equipment. Environmental controls, such as scrubber or thermal oxidizer may be required to prevent process releases to the atmosphere. Do not empty into drains—risk of explosion.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties:

Texture: free-flowing	pH: Not available
Melting Point: -73 °C	Boiling Point: 140 °C
Evaporation Rate: 0.46 butyl acetate=1	Flash Point: 49 °C CC
LEL: 2.7 %	OSHA Flammability Class: II
UEL: 10.3 %	Autoignition: 316 °C
Vapor Pressure: 10 mmHg 36 °C	Vapor Density (air = 1): 3.52
Density: Not available	Specific Gravity (water = 1): 1.0820
Water Solubility: reacts; 0.12g/l(20°C)	Coeff. Water/Oil Dist: Not available
Viscosity: 0.901 cP 20 °C	Volatility: 100 %
Molecular Weight: 102.09	Molecular Formula: (C-H3-C-O)2-O

Solvent Solubility

Soluble: ether, alcohol, acetic acid, ethyl acetate, benzene

10. Stability and reactivity

10.1. Reactivity:

Reacts violently with water.

10.2. Chemical stability:

Sensitive to moisture. May form flammable gases or vapors.

10.3. Possibility of hazardous reactions:

Exothermic reaction with sodium/potassium hydroxide, nitrates. Potentially violent reaction with potassium permanganate, perchloric acid, nitric acid, hydrogen peroxide, chromium VI oxide, ethanol, water.

10.4. Conditions to avoid:

Avoid heat and storing product in near product flash point. Avoid contact with combustible materials and strong oxidizers.

10.5. Incompatible materials:

Iron, copper, peroxide containing materials.

10.6. Hazardous decomposition products:

Carbon oxides, acidic vapors.

11. Toxicological information

11.1. Information on toxicological effects:

Acute oral toxicity LD50 rat:

1780 mg/kg (RTECS)

Acute inhalation toxicity:

1000 mg/L 4 hours (IUCLID)

Acute dermal toxicity LD50 rabbit:

4320 mg/kg (RTECS)

Skin irritation:

Irritation, may cause burns on long term exposure

Eye irritation:

Risk of serious damage to eyes. Risk of blindness.

Genotoxicity in vitro:

Ames test:	negative (IUCLID)
<u>Specific target organ toxicity - single exposure:</u>	<i>The substance is not classified as a specific target organ toxicant, single exposure.</i>
<u>Specific target organ toxicity - repeated exposure:</u>	<i>The substance is not classified as a target organ toxicant, repeated exposure.</i>
<u>Aspiration hazard:</u>	No information available

11.2. Additional information:

Further data: Handle using good occupational and environmental health practices.

12. Ecological information

12.1. Toxicity

<u>Toxicity in fish LC50:</u>	265 mg/L (ECOTOX: 96 hour, Leuciscus idus)
<u>Toxicity to daphnia and other aquatic invertebrates:</u>	55 mg/L; (IUCLID: 24 hour, Daphnia magna)
<u>Toxicity to algae:</u>	4000 mg/L (Merck: 16 hr. Scenedesmus quadricauda)

12.2. Persistence and degradability:

Readily biodegradable >95% (OECD Test Guideline 302B , 5 day)

12.3. Bio accumulative potential:

Not expected (experimental log Pow: 0.58)

12.4. Mobility in soil:

No information available.

12.5. Results of PBT and vPvB assessment:

Assessment not available.

12.6. Other adverse effects:

In water, acetic acid is formed which may shift pH of aqueous ecosystem.

Additional ecological information: Do not allow product to enter surface waters, wastewater or soil.

13. Disposal considerations

Waste treatment methods: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. Transport Information

The transport regulations are cited according to international and/or harmonized transport regulations. Possible national deviations and country specific requirements are not considered.

US DOT Information
Shipping Name: Acetic anhydride
Hazard Class: 8
UN/NA #: UN1715
Packing Group: II
Required Label(s): 8, 3

TDG/ADR Information
Shipping Name: Acetic anhydride
Hazard Class: 8
UN #: UN1715

Packing Group: II
Required Label(s): 8, (3)

ADR Tunnel Code Restrictions

This list contains tunnel restriction codes for those substances and/or chemically related entries which are found in chapter 3.2 of the ADR regulations.

ACETIC ANHYDRIDE (108-24-7) Restriction(s): D/E [UN1715] (II)

RID Information

Shipping Name: Acetic anhydride
Hazard Class: 8
UN #: UN1715
Packing Group: II
Required Label(s): 8, 3

IATA/ICAO Information

Shipping Name: Acetic anhydride
Hazard Class: 8
UN #: UN1715
Packing Group: II
Required Label(s): 8, 3

IMDG Information

Shipping Name: Acetic anhydride
Hazard Class: 8
UN #: UN1715
Packing Group: II
Required Label(s): 3

15. Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture:

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

ACETIC ANHYDRIDE (108-24-7)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)

Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactive:** Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
ACETIC ANHYDRIDE	108-24-7	Yes	Yes	Yes	Yes	Yes

Not listed under California Proposition 65

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL.

ACETIC ANHYDRIDE (108-24-7)

1 %

Germany Water Classification**ACETIC ANHYDRIDE (108-24-7)**

ID Number 3, hazard class 1 - low hazard to waters

Symbol(s)

C Corrosive

Risk Phrases

R10 Flammable.

R20/22 Harmful by inhalation and if swallowed.

R34 Causes burns.

R37/38 Irritating to respiratory system and skin.

R41 Risk of serious damage to eyes.

R36 Irritating to eyes.

Safety Phrases

S1/2 Keep locked-up and out of the reach of children.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Component Analysis – Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
ACETIC ANHYDRIDE	108-24-7	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

Globally Harmonized System of Classification and Labeling (GHS)**European Union GHS Classifications**

Classifications below according to Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures (CLP).

ACETIC ANHYDRIDE (108-24-7)

Flammable liquids -	Category 3	H226 Flammable liquid and vapor.
Acute toxicity - Oral -	Category 4	H302 Harmful if swallowed.
Acute toxicity - Inhalation -	Category 4	H332 Harmful if inhaled.
Skin corrosion/irritation -	Category 1B	H314 Causes severe skin burns and eye damage.

European Union GHS Labeling Information

Labeling information below is according to Regulation (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures (CLP).

ACETIC ANHYDRIDE (108-24-7) Symbol(s):

Signal Word: Danger

Hazard(s):

H226: Flammable liquid and vapor

H302: Harmful if swallowed

H332: Harmful if inhaled

H314: Causes severe skin burns and eye damage

Prevention:

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash ... thoroughly after handling.

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

Response:

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363: Wash contaminated clothing before reuse.

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P321: Specific treatment (see ... on this label).

P330: Rinse mouth.

P370+P378: In case of fire: Use ... for extinction.

Storage:

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents/container to ...

Japan GHS Classifications

Classifications below published under Japan's Chemicals Classification Program according to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

ACETIC ANHYDRIDE (108-24-7)

Flammable liquids -	Category 3	H226 Flammable liquid and vapor.
Acute toxicity - Oral -	Category 4	H302 Harmful if swallowed.
Acute toxicity - Dermal -	Category 5	H313 May be harmful in contact with skin.
Acute toxicity - Inhalation - Vapor -	Category 3	H331 Toxic if inhaled.
Skin corrosion/irritation -	Category 1	H314 Causes severe skin burns and eye damage.
Serious eye damage/eye Irritation -	Category 1	H318 Causes serious eye damage.
Specific target organ toxicity - Single exposure -	Category 1	H370 Causes damage to respiratory system.
Specific target organ toxicity - Single exposure -	Category 3	H336 May cause drowsiness or dizziness.
Specific target organ toxicity - Repeated exposure -	Category 1	H372 Causes damage to respiratory system through prolonged or repeated exposure.
Hazardous to aquatic environment - acute hazard -	Category 3	H402 Harmful to aquatic life.

Japan GHS Labeling Information

Labeling information below according to classifications published by Japan's Chemicals Classification Program according to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

ACETIC ANHYDRIDE (108-24-7) Symbol(s):

Signal Word: Danger

Hazard(s):

H226: Flammable liquid and vapor

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H313: May be harmful in contact with skin

H331: Toxic if inhaled

H314: Causes severe skin burns and eye damage

H318: Causes serious eye damage

H370: Causes damage to organs

H336: May cause drowsiness or dizziness

H372: Causes damage to organs through prolonged or repeated exposure

H402: Harmful to aquatic life

Prevention:

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash ... thoroughly after handling.

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

P273: Avoid release to the environment.

Response:

P308+P313: IF exposed or concerned: Get medical advice/attention.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call a POISON CENTER or doctor/physician.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363: Wash contaminated clothing before reuse.

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310: Immediately call a POISON CENTER or doctor/physician.

P321: Specific treatment (see ... on this label).

P330: Rinse mouth.

P370+P378: In case of fire: Use ... for extinction.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents/container to ...

Korea GHS Classifications (SV)

Classifications below published by Korea's Ministry of Environment (MOE), Ministry of Employment and Labor (MOEL) or Office of National Emergency Management (NEMA, physical hazards only).

ACETIC ANHYDRIDE (108-24-7)

MOEL:

Flammable liquids	Category 3	H226 Flammable liquid and vapor.
Acute toxicity - Oral	Category 4	H302 Harmful if swallowed.
Acute toxicity - Inhalation - Vapor	Category 3	H331 Toxic if inhaled.
Skin corrosion/irritation	Category 1	H314 Causes severe skin burns and eye damage.
Serious eye damage/eye Irritation	Category 1	H318 Causes serious eye damage.
Specific target organ toxicity - Single exposure	Category 1	H370 Causes damage to respiratory system.
Specific target organ toxicity - Single exposure	Category 3	H336 May cause drowsiness or dizziness.
Specific target organ toxicity - Repeated exposure	Category 1	H372 Causes damage to respiratory system through prolonged or repeated exposure.

NEMA: Flammable liquids Category 3 **H226** Flammable liquid and vapor.

Korea GHS Labeling Information

Labeling information below according to classifications published by Korea's Ministry of Environment (MOE), Ministry of Employment and Labor (MOEL) or Office of National Emergency Management (NEMA, physical hazards only).

ACETIC ANHYDRIDE (108-24-7) Symbol(s):



Signal Word: Danger

Hazard(s):

H226: Flammable liquid and vapor

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Prevention:

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash ... thoroughly after handling.

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

Response:

P308+P313: IF exposed or concerned: Get medical advice/attention.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call a POISON CENTER or doctor/physician.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363: Wash contaminated clothing before reuse.

P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P310: Immediately call a POISON CENTER or doctor/physician.

P321: Specific treatment (see ... on this label).

P330: Rinse mouth.

P370+P378: In case of fire: Use ... for extinction.

Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents/container to ...

Symbol(s):



Signal Word: Warning

Hazard(s):

H226: Flammable liquid and vapor

Prevention:

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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.

Response:

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P370+P378: In case of fire: Use ... for extinction.

Storage:

P403+P235: Store in a well-ventilated place. Keep cool.

Disposal:

P501: Dispose of contents/container to ...

New Zealand GHS Classifications

Classifications below according to the Environmental Risk Management Authority's (ERMA) Hazardous Substances and New Organisms (HSNO) Act, as amended. For a reference list defining the alphanumeric categories, please visit ChemADVISOR's website at www.chemadvisor.com/sdsoncommand\ghs_NZ.html

ACETIC ANHYDRIDE (108-24-7) Approval: HSR002890

Flammable liquids	Category 3	H226 Flammable liquid and vapor.
Acute toxicity - Oral	Category 4	H302 Harmful if swallowed.
Acute toxicity - Inhalation	Category 4	H332 Harmful if inhaled.
Skin corrosion/irritation	Category 1C	H314 Causes severe skin burns and eye damage.
Serious eye damage/eye Irritation	Category 1	H318 Causes serious eye damage.

New Zealand GHS Labeling Information

Labeling information below according to classifications published by New Zealand's Environmental Risk Management Authority's (ERMA) Hazardous Substances and New Organisms (HSNO) Act, as amended.

ACETIC ANHYDRIDE (108-24-7) Symbol(s):



Signal Word: Danger

Hazard(s):

H226: Flammable liquid and vapor

H302: Harmful if swallowed

H332: Harmful if inhaled

H314: Causes severe skin burns and eye damage

H318: Causes serious eye damage

Prevention:

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash ... thoroughly after handling.

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

Response:

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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P370+P378: In case of fire: Use ... for extinction.

Storage:

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents/container to ...

Taiwan GHS Classifications

Information below presented according to Taiwan's Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs. This agency has published a series of standards (CNS 15030 1-27 Chemical Classification and Labeling) which provide guidance on classification and labeling of chemicals according to GHS.

ACETIC ANHYDRIDE (108-24-7)

Taiwan:

Flammable liquids	Category 3	H226 Flammable liquid and vapor.
Acute toxicity - Oral	Category 4	H302 Harmful if swallowed.
Acute toxicity - Inhalation	Category 3	H331 Toxic if inhaled.
Skin corrosion/irritation	Category 1	H314 Causes severe skin burns and eye damage.
Serious eye damage/eye Irritation	Category 1	H318 Causes serious eye damage.

Taiwan GHS Labeling Information

Labeling information below according to classifications published by Taiwan's Bureau of Standards, Metrology and Inspection (BSMI) of the Ministry of Economic Affairs. This agency has published a series of standards (CNS 15030 1-27 Chemical Classification and Labeling) which provide guidance on classification and labeling of chemicals according to GHS.

ACETIC ANHYDRIDE (108-24-7) Symbol(s):

Signal Word: Danger

Hazard(s):

H226: Flammable liquid and vapor

H302: Harmful if swallowed

H331: Toxic if inhaled

H314: Causes severe skin burns and eye damage

H318: Causes serious eye damage

Prevention:

P233: Keep container tightly closed.

P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P260: Do not breathe dust/fume/gas/mist/vapors/spray.

P264: Wash ... thoroughly after handling.

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Response:

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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Storage:

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents/container to ...

15.2. Chemical Safety Assessment:

Sipchem has not conducted a chemical safety assessment for this product.

16. Other information

16.1. Training Advice:

Provide safety information, instruction and training to operators handling acetic anhydride.

The information and recommendations herein are taken from data contained in independent, industry recognized references. Although reasonable care has been taken in the preparation of the information herein, Sipchem and International Acetyls Company. make no guarantee, warranty (express or implied) or other representation and assume no responsibility as to the accuracy or suitability of such information for application of the information, since conditions of its use are beyond control of these companies. Sipchem and International Acetyls Company shall not bear any liability whatsoever for any loss or damage incurred in connection with the use of this substance.