

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Acetic Anhydride
CAS number	108-24-7
Synonyms	Acetyl oxide; Acetic acid anhydride; Acetic oxide; Ethanoic anhydride

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

Identified uses	Laboratory chemicals.
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable Liquids	Category 3
Acute Oral Toxicity	Category 4
Acute Inhalation Toxicity	Category 2
Skin Corrosion/Irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statements

Flammable liquid and vapor.
Harmful if swallowed.
Fatal if inhaled.
Causes severe skin burns and eye damage.

Precautionary statements

Prevention: Wash face, hands, and any exposed skin thoroughly after handling. Do not eat, drink, or smoke when using this product. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wear respiratory protection. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep cool.

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

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

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Fire: In case of fire, use CO₂, dry chemical, or foam for extinction.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Lachrymator (substance which increases the flow of tears).
Reacts with water and forms acetic acid.
Corrosive to the respiratory tract.

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Acetic anhydride	Acetyl oxide; Acetic acid anhydride; Acetic oxide; Ethanoic anhydride	108-24-7	>99%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

In case of skin contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

In case of eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

If swallowed Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Difficulty in breathing. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue, and danger of perforation. Symptoms of overexposure may include headache, dizziness, tiredness, nausea, and vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media CO 2, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

Unsuitable extinguishing media Do not use water.

5.2 Specific hazards arising from the substance or mixture

Flammable. Corrosive material. Water reactive. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Hazardous Combustion Products: Carbon monoxide (CO). Carbon dioxide (CO₂).

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Flash Point 49 °C / 120.2 °F Closed Cup

Autoignition Temperature 316 °C / 600.8 °F

Explosion limits

Upper 10.3 vol %

Lower 2.9 vol %

Sensitivity to Mechanical Impact No information available.

Sensitivity to Static Discharge No information available.

NFPA

Health	Flammability	Instability	Physical hazards
3	2	1	N/A

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes, and inhalation of vapors.

6.2 Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3 Methods and materials for containment and cleaning up

Remove all sources of ignition. Do not expose spill to water. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

See Section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Keep away from open flames, hot surfaces, and sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed, seek immediate medical assistance. Do not allow contact with water.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from heat, sparks, and flame. Keep away from water or moist air. Flammables area.

Incompatibilities

Strong acids. Water. Strong reducing agents. Alcohols. Bases. Oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
Acetic anhydride	(Vacated) Ceiling	5 ppm	20 mg/m ³
	TWA	5 ppm	20 mg/m ³

US. ACGIH Threshold Limit Values

Component	Type	Value
Acetic anhydride	TWA	1 ppm
	STEL	3 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value
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Acetic anhydride	IDLH	200 ppm
	Ceiling	5 ppm 20 mg/m3

Biological occupational exposure limits

No information available.

8.2 Exposure controls

Appropriate engineering controls

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles, as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN 166.

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure

No information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Pungent
Odor Threshold	No information available
pH	3
Melting Point/Range	-73.1 °C / -99.6 °F
Boiling Point/Range	140 °C / 284 °F @ 760 mmHg

Evaporation Rate	0.46
Flammability (solid)	Not applicable
Flammability or explosive limit	
Upper	10.3 vol %
Lower	2.9 vol %
Vapor Pressure	5 mbar @ 20 °C
Vapor Density	3.5
Density	1.087
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temp	316 °C / 600.8 °F
Decomposition Temp	No information available
Viscosity	0.91 mPa.s at 20 °C
Molecular Formula	C4 H6 O3
Molecular Weight	102.09 g/mol
VOC Content(%)	No information available
Oxidizing properties	No information available

9.2 Other safety information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Potential for hazardous reactions.

10.2 Chemical stability

Moisture sensitive.

10.3 Possibility of hazardous reactions

None under normal processing.

10.4 Conditions to avoid

Incompatible products. Keep away from open flames, hot surfaces, and sources of ignition.
Exposure to moist air or water.

10.5 Incompatible materials

Strong acids, Water, Strong reducing agents, Alcohols, Bases, Oxidizing agents.

10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂).

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic anhydride	630 mg/kg (Rat)	4000 mg/kg (Rabbit)	400 ppm/6h (Rat)

Skin corrosion/irritation

Causes burns by all exposure routes.

Serious eye damage/eye irritation

Causes burns by all exposure routes.

Respiratory or skin sensitization

Causes burns by all exposure routes.

Germ cell mutagenicity

Not mutagenic in AMES Test.

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Acetic anhydride	108-24-7	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

None known.

Specific target organ toxicity - repeated exposure

None known.

Reproductive toxicity

No information available.

Chronic effects

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue, and danger of perforation. Symptoms of overexposure may include headache, dizziness, tiredness, nausea, and vomiting.

11.2 Additional Information

The toxicological properties have not been fully investigated.

SECTION 12: Ecological information

12.1 Toxicity

Reacts with water so no ecotoxicity data for the substance is available. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

12.2 Persistence and degradability

Persistence is unlikely based on information available.

12.3 Bio accumulative potential

No information available.

12.4 Mobility in soil

Log Pow = -0.27.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN-no	UN1715
Proper Shipping Name	ACETIC ANHYDRIDE
Hazard Class	8
Subsidiary Hazard Class	3
Packing Group	II

IMDG

UN-no	UN1715
Proper Shipping Name	ACETIC ANHYDRIDE
Hazard Class	8
Subsidiary Hazard Class	3
Packing Group	II

IATA

UN-no	UN1715
Proper Shipping Name	ACETIC ANHYDRIDE
Hazard Class	8
Subsidiary Hazard Class	3

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not applicable.

CERCLA Hazardous Substance List (40 CFR 302.4)

Listed, Acetic anhydride (CAS #108-24-7), RQ: 5000 lb.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

See Section 2 for more information.

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) - Hazardous Substances

Listed, Acetic anhydride (CAS #108-24-7), RQ: 5000 lb.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed.

US state regulations

US. Massachusetts RTK - Substance List

Listed, Acetic anhydride (CAS #108-24-7).

US. New Jersey Worker and Community Right-to-Know Act

Listed, Acetic anhydride (CAS #108-24-7).

US. Pennsylvania Worker and Community Right-to-Know Law

Listed, Acetic anhydride (CAS #108-24-7).

California Proposition 65

Not listed.

SECTION 16: Other information

Revision date: 11/15/2024

Revision number: 3

SECTION 17: Disclaimer

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.