

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.

1.3 Details of the supplier of the safety data sheet

Company : Lab Alley, LLC
22111 Highway 71 West, Suite 601
Spicewood, Texas 78669
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 - Vapors (Category 2)
Skin corrosion/irritation (Category 1)
Serious Eye Damage/Eye Irritation (Category 1)
Specific target organ toxicity - single exposure (Category 3)
Target Organs - Respiratory system

2.2 GHS Label elements, including precautionary statements

Pictogram:



Signal Word:

Danger

Hazard statement(s):

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

Precautionary statement(s):

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. 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. Rinse mouth. Do NOT induce vomiting. In case of fire: Use CO₂, dry chemical, or foam for extinction. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified

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

SECTION 3: Composition/information on ingredients

3.1 Components

| Ingredient | CAS Number | Percent | Hazardous Chemical |
|------------------|------------|---------|--------------------|
| Acetic anhydride | 108-24-7 | >95 | Yes |

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice:

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

In case of inhalation:

Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. 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.

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 ingestion: 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. Breathing difficulties. 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 be 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 (and unsuitable) extinguishing media

CO 2, dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray. 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.

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

None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. 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

No additional information available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only under a chemical fume hood. Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. 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 and sources of ignition. Keep away from water. Flammables area.

SECTION 8. Exposure controls/personal protection

8.1 Occupational exposure limits

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|------------------|---------------------------|---|--|
| Acetic anhydride | TWA: 1 ppm STEL: 3 ppm | (Vacated) Ceiling: 5 ppm (Vacated) Ceiling: 20 mg/ m ³ TWA: 5 ppm TWA: 20 mg/m ³ | IDLH: 200 ppm Ceiling: 5 ppm Ceiling: 20 mg/m ³ |

| Component | Quebec | Mexico OEL (TWA) | Ontario TWAEV |
|------------------|---|---|---------------------------|
| Acetic anhydride | TWA: 5 ppm TWA: 21 mg/m ³ | TWA: 5 ppm TWA: 20 mg/m ³ | TWA: 1 ppm STEL: 3 ppm |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

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 EN166.

Skin and 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

Should not be released into the environment. See Section 12 for additional ecological information.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--|
| Physical State | Liquid. |
| Appearance | Colorless. |
| Odor | Pungent. |
| Odor Thresh | No information available. |
| pH | 3 |
| Melting Point/Range | -73.1 °C / -99.6 °F |
| Boiling Point/Range | 140 °C / 284 °F @ 760 mmHg |
| Flash Point | 49 °C / 120.2 °F - closed cup |
| Evaporation Rate | 0.46 |
| Flammability (solid, gas) | Not applicable. |
| Flammability or explosive limit | Upper : 10.3 v/v Lower : 2.9% v/v |
| Vapor Pressure | 5 mbar @ 20 ° |
| Vapor Density | 3.5 |
| Density | 1.087 |
| Solubility | No information |
| 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 | C ₄ H ₆ O ₃ |
| Molecular Weight | 102.09 |
| VOC Content(%) | No information available. |
| Oxidizing properties | None. |

9.2 Other safety information

None.

SECTION 10: Stability and reactivity

10.1 Reactivity

Yes.

10.2 Chemical stability

Stable under recommended storage conditions. Moisture sensitive. Reacts violently with water.

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

Oxidizing agents, Strong acids, Strong bases, Water, Strong reducing agents.

10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product Information

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|------------------|-------------------|-----------------------|---|
| Acetic anhydride | 630 mg/kg (Rat) | 4000 mg/kg (Rabbit) | LC100: 1.67 mg/L/6h (Rat) LC50: 400 ppm/6h (Rat) |

Skin corrosion/irritation

Causes severe skin burns.

Serious eye damage/eye irritation

Causes serious eye burns.

Respiratory or skin sensitization

No information available.

Germ cell mutagenicity

Not mutagenic in AMES test.

Carcinogenicity

*The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|------------------|----------|------------|------------|------------|------------|------------|
| Acetic anhydride | 108-24-7 | Not listed | Not listed | Not listed | Not listed | Not listed |

Reproductive toxicity

No information available.

Specific target organ toxicity - single exposure

Respiratory system

Specific target organ toxicity - repeated exposure

None known.

Aspiration hazard

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 be headache, dizziness, tiredness, nausea and vomiting

11.2 Additional information

None.

SECTION 12. Ecological information

12.1 Toxicity

Ecotoxicity:

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.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|------------------|------------------|--------------------|------------|---------------------|
| Acetic anhydride | Not listed | 265 mg/L LC50 48 h | Not listed | 55 mg/L EC50 = 24 h |

12.2 Persistence and Degradability

Persistence is unlikely based on information available.

12.3 Bioaccumulative Potential

No data available.

12.4 Mobility in Soil

log Pow = -0.27

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

See actual entry in RTECS for complete information.

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

| | |
|-------------------------|------------------|
| 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 |
| Packing Group | II |

IMDG/IMO

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

TDG

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

SECTION 15: Regulatory information

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Acetic anhydride | X | X | - | 203-564-8 | - | | X | X | X | X | X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

| | |
|-----------------------------------|-----|
| Acute Health Hazard | Yes |
| Chronic Health Hazard | No |
| Fire Hazard | Yes |
| Sudden Release of Pressure Hazard | No |
| Reactive Hazard | Yes |

Clean Water Act

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Acetic anhydride | X | 5000 lb | - | - |

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|------------------|--------------------------|----------------|
| Acetic anhydride | 5000 lb | - |

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|------------------|---------------|------------|--------------|----------|--------------|
| Acetic anhydride | X | X | X | - | X |

U.S. Department of Transportation

| | |
|-----------------------------|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade

No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class

B3 Combustible liquid
D1A Very toxic materials
E Corrosive material



SECTION 16: Other information

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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.