Safety Data Sheet

Acetic Anhydride

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Acetic Anhydride

Synonyms/Generic Names: None

Product Number: 0092

Product Use: Industrial, Manufacturing or Laboratory use

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information: 920-623-2140 (Monday-Friday 8:00-4:30)
www.columbuschemical.com

In Case of Emergency Call: CHEMTREC - 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Flammable liquid, Toxic by inhalation, Harmful ingestion, Corrosive

Other Hazards: Lachrymator, Reacts violently with water

Target Organs: None

Signal Words: Danger

Pictograms:

GHS Classification:

Flammable liquids	Category 3
Acute toxicity, Oral	Category 4
Acute toxicity, Inhalation	Category 3
Acute toxicity, Dermal	Category 5
Skin corrosion	Category 1B
Serious eye damage	Category 1

GHS Label Elements, including precautionary statements:

Hazard Statements:

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H313	May be harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.

Precautionary Statements:

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.
P261	Avoid breathing dust/gas/fume/vapors/spray/mist.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/face protection/eye protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do not induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use dry chemical, carbon dioxide or alcohol resistant foam to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal plant.

Potential Health Effects

Eyes	Causes eye irritation
Inhalation	Harmful if inhaled. Causes respiratory tract irritation.
Skin	Harmful if absorbed through skin. Causes skin irritation.
Ingestion	May be fatal if swallowed

NFPA Ratings

Health	3
Flammability	2
Reactivity	2
Specific hazard	Not Available

HMIS Ratings

Health	3
Fire	2
Reactivity	2
Personal	Not Available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Acetic Anhydride	>99	108-24-7	203-564-8	$C_4H_6O_3$	102.09 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention immediately.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention immediately.
Skin	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	**Do Not Induce Vomiting!** Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots. Flammable in the presence of a source of ignition when temperature is above the flash point. Can react violently with water.
Specific hazards arising from the chemical	Emits toxic fumes (oxides of carbon) under fire conditions. (See also Stability and Reactivity section).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Neutralize spill with sodium bicarbonate or lime. Absorb spill with noncombustible absorbent material, then place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

7. HANDLING AND STORAGE

Precautions for safe handling
See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use.

Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area. Keep away from incompatible materials (see section 10 for incompatibilities). Reacts violently with water.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls: Ventilation and appropriate grounding of containers.

Component	Exposure Limits	Basis	Entity
Acetic Anhydride	5 ppm 20 mg/m^3	PEL	OSHA
	5 ppm 20 mg/m^3	REL	NIOSH
	5 ppm	TLV	ACGIH

TWA: Time Weighted Average over 8 hours of work.
TLV: Threshold Limit Value over 8 hours of work.
REL: Recommended Exposure Limit
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit during x minutes.
IDLH: Immediately Dangerous to Life or Health
WEEL: Workplace Environmental Exposure Levels
CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses or goggles, and face shield.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear nitrile or rubber gloves, and full body covering. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations
Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Faintly colored liquid
Odor	Pungent
Odor threshold	Not Available
pH	Not Available
Melting point/freezing point	-73°C (-101°F)
Initial boiling point and boiling range	139°C (282°F)
Flash point	49°C (121°F) – Closed cup
Evaporation rate	0.49
Flammability (solid, gas)	Flammable
Upper/lower flammability or explosive limit	Lower: 2.9%, Upper: 10.3%
Vapor pressure	4 mmHg (@ 20°C)
Vapor density	3.5 (Air=1)
Relative density	Not Available
Solubility (ies)	Soluble in water
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	316°C (600°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Heat, ignition sources, moisture.
Incompatible Materials	Acids, alcohols, bases, oxidizing agents, reducing agents, powdered metals.
Hazardous Decomposition Products	Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	LD50 Dermal – rabbit – 4,320 mg/kg
Eyes	Not Available
Respiratory	LC50 Inhalation – rat – 4 hours – 4,200 mg/m^3
Ingestion	LD50 Oral – rat – 1,780 mg/kg

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Burning, irritation, inflammation and/or edema of exposed tissues.
Eyes	Burning, irritation.
Respiratory	Burning, coughing, wheezing, shortness of breath, headache, nausea, vomiting, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema.
Ingestion	Burning, nausea, vomiting.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50 – Leuciscus idus melanotus – 265 mg/l – 48 hours
Aquatic Invertebrate	EC50 – Daphnia magna (Water flea) – 55 mg/l – 96 hours
Terrestrial	Not Available

Persistence and Degradability	Not Available
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	Not Available

13. DISPOSAL CONSIDERATIONS

Waste Product or Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product or residue.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	UN1715, Acetic anhydride, 8, (3), pg II
TDG	UN1715, ACETIC ANHYDRIDE, 8, (3), PG II

IMDG	UN1715, ACETIC ANHYDRIDE, 8, (3), PG II
Marine Pollutant	No
IATA/ICAO	UN1715, Acetic anhydride, 8, (3), pg II

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	No SARA Hazard
SARA 304	No SARA Hazard
SARA 311	Acute Health Hazard, Fire Hazard
SARA 312	Acute Health Hazard, Fire Hazard
SARA 313	No SARA Hazard
WHMIS Canada	Class B-3: Flammable and combustible liquid- Combustible liquid Class E: Corrosive material

16. OTHER INFORMATION

Revision	Date
Revision 1	06-01-2012
Revision 2	08/15/2013
Revision 3	04/22/2014
Revision 4	01/20/2015
Revision 5	04/23/2018