

# SAFETY DATA SHEET

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

### Product identifier

**Product name:** Eastman(TM) Acetic Anhydride

**Product No.:** EAN 900004. 06355-00, P0635515, P0635500, E0635502, P0635516, P0635517, P0635518, P06355S1, P0635501, P0635507, P063550D, P063550F, P063550G, P0635511

**Synonyms, Trade Names:** 06355-00

### Additional identification

**Chemical name:** acetic anhydride  
**REACH Registration No.:** 01-2119486470-36-0003  
**CAS-No.:** 108-24-7

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

**Identified uses:** Chemical Intermediate

**Uses advised against:** None known.

### Details of the supplier of the safety data sheet

#### Manufacturer / Supplier

Eastman Chemical Company  
200 South Wilcox Drive  
Kingsport, TN 37660-5280 US  
+14232292000

Visit our website at [www.EASTMAN.com](http://www.EASTMAN.com) or email [emnmsds@eastman.com](mailto:emnmsds@eastman.com)

### Emergency telephone number:

For emergency health, safety, and environmental information, call 1-423-229-4511 or 1-423-229-2000.

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300 or call 423-229-2000.

## SECTION 2: Hazards identification

### Hazard Classification:

#### Physical Hazards

Flammable liquids Category 3

#### Health Hazards

Acute toxicity (Oral) Category 4  
Acute toxicity (Inhalation) Category 2  
Skin Corrosion/Irritation Category 1B  
Serious Eye Damage/Eye Irritation Category 1

**OSHA Specified Hazards:** not applicable

**Warning label items including precautionary statement:**

**Pictogram:****Signal Words:** DANGER!**Hazard Statement(s):** H226: Flammable liquid and vapor.  
H302: Harmful if swallowed.  
H330: Fatal if inhaled.  
H314: Causes severe skin burns and eye damage.**Precautionary Statement:****Prevention:** 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.  
P243: Take precautionary measures against static discharge.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P270: Do not eat, drink or smoke when using this product.  
P264: Wash hands thoroughly after handling.  
P260: Do not breathe dust/fume/gas/mist/vapors/spray.  
P271: Use only outdoors or in a well-ventilated area.  
P242: Use only non-sparking tools.  
P284: Wear respiratory protection.**Response:** P370+P378: In case of fire; Use water spray, carbon dioxide, dry chemical or alcohol foam for extinction.  
P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330: Rinse mouth.  
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.  
P363: Wash contaminated clothing before reuse.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**Storage:** P403+P233: Store in a well-ventilated place. Keep container tightly closed.  
P405: Store locked up.**Disposal:** P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.**Hazard(s) not otherwise classified (HNOC):** Reacts with water.

**SECTION 3: Composition/information on ingredients****Substances / Mixtures****General information:**

Chemical name	Concentration	Additional identification	Notes
acetic anhydride	94 - 100%	CAS-No.: 108-24-7	#
acetic acid	6%	CAS-No.: 64-19-7	#

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

# This substance has workplace exposure limit(s).

**SECTION 4: First aid measures****Description of first aid measures**

- Inhalation:** Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.
- Skin contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
- Ingestion:** Call a physician or poison control center immediately. Do NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration.

**Most important symptoms and effects, both acute and delayed:** May irritate and cause redness and pain.

**Indication of any immediate medical attention and special treatment needed**

- Hazards:** None known.
- Treatment:** Treat symptomatically.

**SECTION 5: Firefighting measures**

**General Fire Hazards:** Combustible liquid and vapor. USE WATER WITH CAUTION. Material reacts with water.

**Extinguishing media**

**Suitable extinguishing media:** Carbon Dioxide. Dry chemical. Alcohol foam.

**Unsuitable extinguishing media:** Water.

**Special hazards arising from the substance or mixture:** Reacts violently with water. Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials.

**Advice for firefighters**

**Special fire fighting procedures:** Fight fire from a protected location. Keep away from combustible material. Use water spray to keep fire-exposed containers cool. Do not allow water to get into container because of violent reaction and possible flash fire.

**Special protective equipment for fire-fighters:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**SECTION 6: Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Wear appropriate personal protective equipment.

**Environmental Precautions:** Do not release into the environment.

**Methods and material for containment and cleaning up:** Eliminate sources of ignition. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spillages: Neutralize spilled material with crushed limestone, soda ash or lime. Cover with sand or earth. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

**Notification Procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**SECTION 7: Handling and storage:**

**Precautions for safe handling:** Do not breathe mist or vapor. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed and dry. Contents may develop pressure if exposed to water.

**Specific end use(s):** Chemical Intermediate

**SECTION 8: Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

Country specific exposure limits have not been established or are not applicable unless listed below.

Chemical name	type	Exposure Limit Values	Source
acetic anhydride	TWA	1 ppm	US. ACGIH Threshold Limit Values (12 2010)
	STEL	3 ppm	US. ACGIH Threshold Limit Values (12 2010)
	PEL	5 ppm 20 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

acetic acid	TWA	10 ppm	US. ACGIH Threshold Limit Values (01 2010)
	STEL	15 ppm	US. ACGIH Threshold Limit Values (01 2010)
	PEL	10 ppm 25 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

**Exposure controls**

**Appropriate engineering controls:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment**

**General information:** PPE selections vary based on potential exposure conditions such as application, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material is based upon intended, normal usage. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Provide eyewash station and safety shower.

**Eye/face protection:** Wear safety glasses with side shields (or goggles) and a face shield.

**Skin protection**  
**Hand Protection:** Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

**Other:** No data available.

**Respiratory Protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable.

**Hygiene measures:** Observe good industrial hygiene practices.

**Environmental Controls:** All information for relevant exposure scenarios including risk management measures are listed in the Annex.

**SECTION 9: Physical and chemical properties**

**Information on basic physical and chemical properties**  
**Appearance**

<b>Physical state:</b>	liquid
<b>Form:</b>	liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Strong sour/acidic
<b>Odor Threshold:</b>	0.117 ppm
<b>pH:</b>	No data available.
<b>Freezing Point:</b>	-73 °C
<b>Boiling Point:</b>	139.5 °C
<b>Flash Point:</b>	49 °C
<b>Evaporation Rate:</b>	Not determined.
<b>Flammability (solid, gas):</b>	Flammable.
<b>Flammability Limit - Upper (%)-:</b>	10.3 %(V)
<b>Flammability Limit - Lower (%)-:</b>	2.7 %(V)
<b>Vapor pressure:</b>	0.68 kPa (25 °C)
<b>Vapor density (air=1):</b>	3.5
<b>Specific Gravity:</b>	1.082 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	0.12 g/l (20 °C)
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	log Pow: -0.58
<b>Autoignition Temperature:</b>	316 °C
<b>Decomposition Temperature:</b>	(DTA) No exotherm
<b>Dynamic viscosity:</b>	0.842 mPa.s (25 °C)
<b>Kinematic viscosity:</b>	0.77 mm <sup>2</sup> /s (25 °C)
<b>Explosive properties:</b>	Not classified.
<b>Oxidizing properties:</b>	Not classified.

## SECTION 10: Stability and reactivity

<b>Reactivity:</b>	Reacts violently with water.
<b>Chemical Stability:</b>	Stable
<b>Possibility of Hazardous Reactions:</b>	None known.
<b>Conditions to Avoid:</b>	Heat, sparks, flames. Contact with water. Moist air.
<b>Incompatible Materials:</b>	Alcohols. Bases. Water.
<b>Hazardous Decomposition Products:</b>	Carbon Dioxide. Carbon Monoxide.

## SECTION 11: Toxicological information

### Information on likely routes of exposure

<b>Inhalation:</b>	Fatal if inhaled.
<b>Ingestion:</b>	Harmful if swallowed.

**Skin contact:** Causes severe skin burns.

**Eye contact:** Causes severe eye burns.

**Information on toxicological effects**

**Oral**

**Product:** No data available.  
**Specified substance(s):**  
 acetic anhydride Oral LD-50: (Rat): 630 mg/kg  
**Specified substance(s):**  
 acetic acid Oral LD-50: (Rat): 3,320 mg/kg

**Dermal**

**Product:** No data available.  
**Specified substance(s):**  
 acetic anhydride Dermal LD-50: (Rabbit): 4,000 mg/kg  
**Specified substance(s):**  
 acetic acid Dermal LD-50: (Rabbit): 1,060 mg/kg

**Inhalation**

**Product:** No data available.  
**Specified substance(s):**  
 acetic anhydride LC50 (Rat, 4 h): 1.25 mg/l  
**Specified substance(s):**  
 acetic acid LC50 (Rat, 4 h): > 16000 ppm

**Repeated dose toxicity**

**Product:** No data available.  
**Specified substance(s):**  
 acetic anhydride LOAEC (Rat, Inhalation study:, 14 d): 25 ppm  
**Specified substance(s):**  
 acetic acid NOAEL (Rat, Oral Study): 290 mg/kg  
 NOAEL (Rat, Dermal Study): 30 mg/kg

**Skin Corrosion/Irritation**

**Product:** No data available.  
**Specified substance(s):**  
 acetic anhydride (Rabbit, 24 h): Severe  
**Specified substance(s):**  
 acetic acid (Rabbit, 24 h): Severe

**Serious Eye Damage/Eye Irritation**

**Product:** No data available.  
**Specified substance(s):**  
 acetic anhydride (Rabbit): Severe  
**Specified substance(s):**

acetic acid (Rabbit): Severe

**Respiratory or Skin Sensitization**

**Product:** No data available.

**Specified substance(s):**  
acetic anhydride There is no data available to indicate sensitizing potential for this substance.

**Specified substance(s):**  
acetic acid There is no data available to indicate sensitizing potential for this substance.

**Carcinogenicity**

**Product:** No data available.

**Specified substance(s):**  
acetic anhydride There are sufficient data to conclude that at concentrations below the threshold for chronic irritation, there is no evidence of carcinogenic potential.

**Toxicity to reproduction**

**Product:** No data available.

**Developmental toxicity**

**Product:** No data available.

**Specified substance(s):**  
acetic anhydride Rat; NOAEL: 1,600 mg/kg; Ingestion; Remarks: Read-across from a similar material

**Specified substance(s):**  
acetic acid Rat; NOAEL: 345 mg/kg; Ingestion

**Germ Cell Mutagenicity**

**In vitro**

**Product:** No data available.

**Specified substance(s):**  
acetic anhydride Salmonella typhimurium assay (Ames test) (Bacterial Reverse Mutation Assay):  
negative

**Specified substance(s):**  
acetic acid Salmonella typhimurium assay (Ames test) (Bacterial Reverse Mutation Assay):  
negative  
Chromosomal aberration (In vitro Mammalian Chromosome Aberration Test):  
negative

**In vivo**

**Product:** No data available.

**Specified substance(s):**  
acetic anhydride Mutagenicity - Mammalian (Mammalian Bone Marrow Chromosome Aberration Test)  
Inhalation - vapor (Rat): Read-across from a similar material negative

**Specified substance(s):**  
acetic acid Chromosomal aberration Inhalation - vapor (Rat): Read-across from a similar  
material negative



**Specific Target Organ Toxicity - Single Exposure**

**Product:** No data available.  
**Specified substance(s):**  
acetic anhydride Inhalation - dust and mist: Respiratory tract irritation.

**Specific Target Organ Toxicity - Repeated Exposure**

**Product:** No data available.

**Aspiration Hazard**

**Product:** No data available.

**Other effects:** No data available.

**SECTION 12: Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish**

**Product:** No data available.  
**Specified substance(s):**  
acetic anhydride LC-50 (Fish, 96 h): 300.82 mg/l Read-across from a similar material  
acetic acid LC-50 (Fathead Minnow, 96 h): 300.82 mg/l

**Aquatic Invertebrates**

**Product:** No data available.  
**Specified substance(s):**  
acetic anhydride EC-50 (daphnid, 48 h): 300.82 mg/l Read-across from a similar material  
acetic acid EC-50 (daphnid, 48 h): > 300.82 mg/l

**Chronic hazards to the aquatic environment:****Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.  
**Specified substance(s):**  
acetic anhydride EC-50 (Alga, 72 h): 300.82 mg/l Read-across from a similar material  
acetic acid EC-50 (Alga, 72 h): 300.82 mg/l

**Persistence and Degradability****Biodegradation**

**Product:** No data available.

**Specified substance(s):**  
acetic anhydride 96 % (20 d) Readily biodegradable Read-across from a similar material  
acetic acid 96 % (20 d) Readily biodegradable

**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative Potential****Bioconcentration Factor (BCF)**

**Product:** No data available.

**Specified substance(s):**  
acetic acid Bioconcentration Factor (BCF): 3.16

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** Log Kow: -0.58 20 °C

**Mobility in Soil:** Log Koc: 0.146 (QSAR model) Read-across from a similar material

**Other Adverse Effects:** No data available.

**SECTION 13: Disposal considerations****Waste treatment methods**

**General information:** No data available.

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements. Mix with compatible chemical which is less flammable and incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

**SECTION 14: Transport information**

*Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.*

**DOT**

Reportable Quantity: 2,270 kg (acetic anhydride)  
Possible Shipping Description(s):

UN 1715 Acetic anhydride 8 (3) II

**IMDG - International Maritime Dangerous Goods Code**

Possible Shipping Description(s):

UN 1715 ACETIC ANHYDRIDE 8 (3) II

**IATA**

Possible Shipping Description(s):

UN 1715 Acetic anhydride 8 (3) II

**SECTION 15: Regulatory information**

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

**This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.**

**WHMIS (Canada) Status:** controlled

**WHMIS (Canada) Hazard Classification:** B/3, D/1/A, E

**SARA 311-312 Hazard Classification(s):**

immediate (acute) health hazard

fire hazard

reactive hazard

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical List**

NONE

**OSHA:** hazardous

**TSCA (US Toxic Substances Control Act):** All components of this product are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

**DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act):** All components of this product are listed on the DSL. Any impurities present in this product are exempt from listing.

**AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme):** All components of this product are listed on AICS or otherwise comply with NICNAS.

**MITI (Japanese Handbook of Existing and New Chemical Substances):** All components of this product are listed in the Handbook or have been approved in Japan by new substance notification.

**ECL (Korean Toxic Substances Control Act):** All components of this product are listed on the Korean inventory or otherwise comply with the Korean Toxic Substances Control Act.KE-00017

**Philippines Inventory (PICCS):** All components of this product are listed on the Philippine inventory or otherwise comply with PICCS.

**Inventory of Existing Chemical Substances in China:** All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).

## SECTION 16: Other information

**HMIS® Hazard Ratings:** Health - 3, Flammability - 2, Chemical Reactivity - 2

*HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.*

**Revision Information:** New SDS

**Key literature references and sources for data:** No data available.

**Training information:** No data available.

**Issue Date:** 05/14/2015

**SDS No.:**

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.