

G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME:-----> **Acetic Anhydride** (All Grades)

PRODUCT NUMBER(S):-----> 100080, 100081

TRADE NAMES/SYNONYMS:----> Acetyl Ether, Acetyl Oxide, Ethanoic Anhydride

CAS-No: 108-24-7

Chemical Family: Anhydride

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

RECOMMENDED USE: Manufacture of substances, Laboratory Chemicals

USES ADVISED AGAINST: No information available

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: **G.J. CHEMICAL CO., INC.**

Address: **40 VERONICA AVENUE
SOMERSET, NJ 08873**

Telephone: **1-973-589-1450**

Fax: **1-973-589-3072**

1.4 Emergency Telephone Number

Emergency Phone: **1-800-424-9300 (CHEMTREC)**

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

Flammable liquids (Category 3), H226

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H330

Skin corrosion (Category 1B), H314

Serious eye damage (Category 1), H318

2.2 GHS Label elements, including precautionary statements



Pictogram

GHS02

GHS06

GHS05

Signal word: DANGER

Hazard statement(s)

**H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H330 Fatal if inhaled.**

Precautionary statement(s)

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.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin 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/ eye protection/ face protection.**

Response:

**P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
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 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.**

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 an approved waste disposal plant.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Lachrymator. Reacts violently with water.**

3. INGREDIENTS

3.1 SUBSTANCE:

Ingredient	CAS No.	% by WT. Range	CLASSIFICATION
Acetic Anhydride	108-24-7 EC-No.203-564-8 Index-No.607-008-00-9 Reg.-No. 01-2119486470-36-XXXX	99.5	Flammable liquids (Category 3), H226 Acute toxicity, Oral (Category 4), H302 Acute toxicity, Inhalation (Category 3), H330 Skin corrosion (Category 1B), H314 Skin corrosion (Category 1B), H318

3.2 MIXTURE: Not applicable.

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES:

INHALATION: ACETIC ANHYDRIDE

****FIRST AID- Remove to fresh air. If not breathing give artificial respiration. Keep warm and quiet. Get medical attention immediately.**

EYE CONTACT (Splash): ACETIC ANHYDRIDE

****FIRST AID- Immediately flush eyes with water for 15 minutes. Hold eyelids open for complete irrigation. Remove contact lenses, if worn, after initial flush. Immediately take to a physician.**

SKIN CONTACT (Splash): ACETIC ANHYDRIDE

****FIRST AID- Wash affected area with soap and water for 15 minutes. Remove contaminated clothing and shoes. Consult a physician if irritation persists.**

INGESTION: ACETIC ANHYDRIDE

****FIRST AID- Do NOT induce vomiting. Patient should be made to drink large amounts of water. Never give anything by mouth to an unconscious person. Consult a physician or poison control center, treat symptomatically.**

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED INGESTION:

Eye: Exposure to liquid causes severe eye burns, damage irreversible, exposure to vapors causes eye irritation; Symptoms are eye irritation, burning sensation, pain, watering and/or change of vision;

Skin: Causes skin burns, may be harmful if absorbed through skin; Symptoms are redness or discoloration, swelling, itching, burning or blistering.

Inhalation: Toxic if inhaled. Causes severe respiratory tract irritation; Symptoms

are nasal discharge, hoarseness, coughing, chest pain, and breathing difficulty. Accumulation of fluid in lungs, symptoms can be delayed for several hours.

Ingestion: Causes severe digestive tract burns, Symptoms are nausea, vomiting, loss of appetite, diarrhea. In addition, inflammation of mouth, throat, esophagus and/or stomach.

Chronic:

Target organ effects: Overexposure may cause: Injury to eyes, digestive tract damage, respiratory tract damage and skin damage.

Medical Conditions Aggravated by Exposure: Significant exposure to this chemical may adversely affect people with disease of the:
Respiratory tract, skin, eyes.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Specific details on antidote: No recommendation given.
Note to physician: Observe for latent pulmonary edema.

5. FIRE FIGHTING MEASURES

Flash Point: 49°C (120°F) Closed Cup

LEL %:2.7 (V)

Auto-ignition temperature: 316°C (601°F)

UEL %:10.3 (V)

UNIFORM FIRE CODE: Combustible Class II

5.1 SUITABLE EXTINGUISHING MEDIA: Foam--> x CO2--> x Dry Chemical-->
x Water-fog--> x Other-->

Unsuitable extinguishing media: Do not use waterjet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR

MIXTURE: FIRE AND EXPLOSION HAZARD: DANGEROUS FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME. VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL A CONSIDERABLE DISTANCE TO A SOURCE OF IGNITION AND FLASH BACK. VAPORS CAN ACCUMULATE IN LOW AREAS.

Keep containers tightly closed. Combustible liquid; isolate from all sources of ignition. During a fire potentially toxic/irritating fumes from combustion/decomposition products may be generated.

CONDITIONS OF FLAMMABILITY: Flammable in the presence of a source of ignition when the temperature is above the flash point

HAZARDOUS COMBUSTION PRODUCTS: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, carbon oxides, nitrogen oxides and other unidentified organic compounds evolve when this material undergoes combustion.

5.3 ADVICE FOR FIREFIGHTERS: Shut off source. Keep unnecessary people away; isolate hazard area and deny entry. Avoid breathing vapors, stay upwind Do not spray pool fires directly. A solid stream of water or foam directed

into hot burning liquid can cause frothing. Move container from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. For massive fire in cargo area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Cool containers with flooding amounts of water from as far a distance as possible. Wear NIOSH/MSHA approved self-contained breathing apparatus (SCBA) for confined spaces. Use full fire-fighting protective clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Combustible Liquid; Eliminate ignition sources in the vicinity of the spill or released vapor. Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations. For large spills evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Vapors can accumulate in low areas.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Methods for cleanup and containment:

Use explosion proof equipment and equipment that can withstand the corrosive nature of this product. Shut off valves, contain spill, keep out of water sources and sewers, for smaller spills add non-flammable absorbent in spill area. For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent.

Methods for disposal:

Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Flush with water to remove trace residue. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations.

REPORTABLE QUANTITY (RQ): 5000lbs.

The Superfund Amendments and Reauthorization Act (SARA) Section 304 requires that a release equal to or greater than the reportable quantity for this substance be immediately reported to the local emergency planning committee and the state emergency response commission (40 CFR 355.40). If the release of this substance is reportable under CERCLA Section 103, the national response center must be notified immediately at (800) 424-8882 or (202) 426-2675 in the metropolitan Washington, D. C. area (40 CFR 302.6).

6.4 REFERENCE TO OTHER SECTIONS: See Sections 8 and 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: This material presents a fire hazard. Liquid evaporates and forms vapor (fumes), which can catch fire and burn with

explosive violence. Invisible vapor spreads easily and can be set on fire by many sources, such as pilot lights, welding equipment, and electrical motors and switches. Vapor is heavier than air and can travel considerable distance to a source of ignition and flash back. Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers.

Advice on general occupational hygiene:

Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

STATIC HAZARD: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not be sufficient. For more information refer to OSHA Standard 29CFR 1910.106 “Flammable and Combustible Liquids” and National Fire Protection Association (NFPA 77) “Recommended Practice on Static Electricity”.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Recommended storage temperature: 15 - 25°C. Store large quantities only in cool, dry areas in buildings designed to comply with OSHA 1910.106. Keep containers tight and upright to prevent leakage. Do not contact with oxidizing materials. Keep containers closed when not in use. Do not take internally.

CONTAINER WARNINGS: Containers should be Bonded and Grounded when pouring. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

Ingredient	CAS No.	% by WT. Range	Exposure Limits
Acetic Anhydride	108-24-7 EC-No.203-564-8 Index-No.607-008-00-9	99.5	1ppm TWA (ACGIH) 3ppm STEL (ACGIH) 5ppm TWA (OSHA)

Key: (PEL) = Permissible Exposure Limit OSHA
(TLV) = Threshold Limit Value OSHA & ACGIH
(STEL) = Short Term Exposure Limit ACGIH
(WEEL) = USA. Workplace Environmental Exposure Levels
(TWA) = Time Weighted Average
CAS = Chemical Abstracts Registry Number
IDLH = Immediate Danger to Life and Health
N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS: Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATORY PROTECTION: The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA): For vapor concentrations 1 to 10 times ACGIH TWA use an air purifying NIOSH/MSHA Approved respirator with full face-piece and organic vapor cartridges. For concentrations over 10 times ACGIH TWA and in confined areas use a approved positive pressure full face-piece supplied air respirator.

BODY CLOTHING: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. Remove and wash contaminated clothing before reuse.

SKIN PROTECTION: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Full contact Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Splash contact Material: Nature latex/chloroprene

Minimum layer thickness: 0.6 mm

Break through time: 60 min

HYGIENE: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE/FACE PROTECTION: Use safety eyewear with splash-guards or face shield. Contact lenses should not be worn. Emergency shower and eyewash should be easily accessible to the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

Acetic Anhydride 108-24-7

Appearance-----> Clear liquid
Color-----> Colorless
Odor-----> Strong pungent odor
Odor Threshold-----> No data available
pH-----> No data available
Molecular weight-----> 102.09amu
Melting/Freezing Point-----> -73°C (-99°F)
Boiling Range (°F)-----> 138 - 140°C (280 - 284°F)
Specific Gravity-----> 1.081@20°C
Vapor Pressure-----> 4mmHg@20°C (68°F)
 10mmHg@36°C (97°F)
Vapor Density (air=1)-----> 3.52
Water Solubility-----> Complete
Partition Coefficient N-Octanol/water-> log Pow: ca. -0.27
Evaporation Rate (Butyl Acetate=1)----> 0.46
Flash Point-----> 49°C (120°F) - closed cup
Upper Flammability Limit-----> 10.3% (V)
Lower Flammability Limit-----> 2.7% (V)
Auto-ignition Temperature-----> 316°C (601°F)
Decomposition Temperature-----> No data available
Viscosity-----> No data available
Explosive Properties-----> No data available
Oxidizing Properties-----> No data available

9.2 OTHER INFORMATION:

Surface Tension-----> 32.7 Nm/m at 20 °C (68 °F)

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available.

10.2 CHEMICAL STABILITY: Unstable () Stable (X)

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: Vapors may form flammable mixtures with air.

HAZARDOUS POLYMERIZATION: May occur () Will not occur (X)

10.4 CONDITIONS TO AVOID: --> Heat, Sparks, Pilot Lights, Static Electricity, and Open Flame.

10.5 INCOMPATIBLE MATERIALS --> Extremely reactive or incompatible with moisture. Strong bases, strong acids, strong oxidizing agents, bromine pentafluoride.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: Fumes, Smoke, Carbon Monoxide

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eye> Exposure to liquid causes severe eye burns, damage irreversible, exposure to vapors causes eye irritation; Symptoms are eye irritation, burning sensation, pain, watering and/or change of vision;

Skin> Causes skin burns, may be harmful if absorbed through skin; Symptoms are redness or discoloration, swelling, itching, burning or blistering.

Inhalation> Toxic if inhaled. Causes severe respiratory tract irritation; Symptoms are nasal discharge, hoarseness, coughing, chest pain, and breathing difficulty. Accumulation of fluid in lungs, symptoms can be delayed for several hours.

Ingestion> Causes severe digestive tract burns, Symptoms are nausea, vomiting, loss of appetite, diarrhea. In addition, inflammation of mouth, throat, esophagus and/or stomach.

Chronic:

Target organ effects: Overexposure may cause: Injury to eyes, digestive tract damage, respiratory tract damage and skin damage.

Medical Conditions Aggravated by Exposure> Significant exposure to this chemical may adversely affect people with disease of the: Respiratory tract, skin, eyes.

ACUTE TOXICITY:

The effects of overexposure shown in Section III are based on acute toxicity profiles. Typical values are:

Ingredient	 Oral LD50 (Rat)	 Skin LD50 (Rabbit)	 Inhalation LC50	
Acetic Anhydride	 630mg/kg	 4320mg/kg	 400ppm/6hr	

SKIN CORROSION/IRRITATION: Skin - in vitro assay Result: Causes burns.

SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - Rabbit Result: Severe eye irritation

RESPIRATORY OR SKIN SENSITIZATION: No data available.

MUTAGENIC EFFECTS: No evidence of Mutagenic effects.

CARCINOGEN STATUS:

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.

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.

REPRODUCTIVE TOXICITY: No evidence of reproductive effects.

Specific target organ toxicity (STOT- SE) - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: No data available

11.2 ADDITIONAL INFORMATION: Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.,

RTECS: AK1925000

12. ECOLOGICAL INFORMATION

Acetic Anhydride readily hydrolyzes to acetic acid in water. The following ecotoxicity concentrations for Acetic Anhydride were found to be about half those for acetic Acid.

12.1 AQUATIC TOXICITY (Acute):

The aquatic toxicity and biodegradation of acetic acid are expected to be influenced by its potential to lower pH.

Exhibits slight acute toxicity to aquatic species.

Toxicity to Fish:

LC50 - *Leuciscus idus melanotus* - 265 mg/l - 48 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - *Daphnia* - 55 mg/l - 96 h

Toxicity to Algae:

EC10 - *Desmodesmus subspicatus* (green algae) - 3,400 mg/l - 192 h

12.2 PERSISTENCE AND DEGRADABILITY: Acetic Anhydride hydrolyzes according to first order reaction to Acetic Acid. Acetic Acid biodegrades readily if released to water (e.g. BOD 5day 63-81%). Atmospheric photochemical degradation half-life is estimated to be 22 days. Zahn-Wellens Test - Exposure time 5 d

Result: - Readily biodegradable

12.3 BIOACCUMULATIVE POTENTIAL: The log n-octanol/water partition coefficient is - 0.27. No bioaccumulation is to be expected (log Pow <= 4).

Bio-concentration Factor (BCF): No data available

12.4 MOBILITY IN SOIL:

SURFACE TENSION: 32.7 mN/m 20°C (68°F)

This product is water soluble and may spread in water systems.

12.5 RESULTS OF PBT AND vPvB:

PBT assessment results: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS: Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations. Incinerate under controlled conditions in a permitted facility.

CONTAMINATED PACKAGING: Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

RCRA: The unused product is a RCRA hazardous waste if discarded. The RCRA ID numbers are: D001 and D002

If the waste is a spent solvent, the appropriate spent solvent code should be used.

DISPOSAL MUST BE IN ACCORDANCE WITH STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE, 48 CFR 262

14. TRANSPORT INFORMATION

Land Transport (DOT)

- 14.1 USDOT ID Number-----> UN1715
- 14.2 USDOT Shipping Name-----> Acetic Anhydride
- 14.3 USDOT Hazard Classification-----> 8 (Corrosive Liquid)
USDOT Label Codes-----> 8,3 (Corrosive, Flammable Liquid)
- 14.4 USDOT Package Code-----> II
- 14.5 Marine Pollutant-----> No
- 14.6 Special precautions for user-----> Yes
Emergency Response Guide-----> 137
Reportable quantity-----> 5000lbs.

Sea Transport (IMDG)

- 14.1 ID Number-----> UN1715
- 14.2 Proper shipping name-----> ACETIC ANHYDRIDE
- 14.3 Hazard Classification-----> 8,3 (Corrosive, Flammable Liquid)
Label Codes-----> 8,3
- 14.4 Package Code-----> II
- 14.5 Marine Pollutant-----> No
- 14.6 Special precautions for user-----> Yes
EMS-Number-----> F-E, S-C

Air Transport (IATA)

- 14.1 ID Number-----> UN1715
- 14.2 Proper shipping name-----> Acetic Anhydride
- 14.3 Hazard Classification-----> 8,3 (Corrosive, Flammable Liquid)
Label Codes-----> 8,3
- 14.4 Package Code-----> II
- 14.5 Environmental hazard-----> None
- 14.6 Special precautions for user-----> Yes

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed

SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Not Listed

SECTION 311/312: Hazard Categorization (40 CFR 370) - Acute Health Hazard, and Fire Hazard.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Listed

Acetic anhydride CAS-No.108-24-7

SECTION 101(14) Reportable Quantity: 5000lbs.

Massachusetts Right to Know Components

Acetic anhydride CAS-No.108-24-7

Pennsylvania Right to Know Components

Acetic anhydride CAS-No.108-24-7

New Jersey Right to Know Components

Acetic anhydride CAS-No.108-24-7

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

TSCA (Toxic Substance Control Act)

Acetic anhydride CAS-No.108-24-7 is listed on the TSCA Inventory.

International Inventories:

<u>Country or Region</u>	<u>Inventory Name</u>	<u>On inventory yes/no</u>
<u>Australia</u>	Australian Inventory of Chemical Substances (AICS)	Yes
<u>Canada</u>	Domestic Substances List (DSL)	Yes
<u>Canada</u>	Non-Domestic Substances List (NDSL)	No
<u>China</u>	Inventory of Existing Chemical Substances in China (IECSC)	Yes
<u>Europe</u>	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
<u>Europe</u>	European List of Notified Chemical Substances (ELINCS)	No
<u>Japan</u>	Inventory of Existing and New Chemical Substances (ENCS)	Yes
<u>Japan</u>	Industrial Safety & Health Law Inventory (ISHL)	Yes
<u>Korea</u>	Existing Chemicals List (ECL)	Yes
<u>Mexico</u>	National Inventory of Chemical Substances (INSQ)	Yes

<u>New Zealand</u>	New Zealand Inventory	Yes
<u>Philippines</u>	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
<u>Switzerland</u>	Inventory of Notified New Substances (CHINV)	Yes
<u>Taiwan</u>	National Existing Chemical Inventory (NECI)	Yes
<u>United States & Puerto Rico</u>	Toxic Substances Control Act Inventory	Yes

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has been carried out for this substance.

16. OTHER INFORMATION:

HMIS (Hazardous Materials Identification System)

Hazard Rating:

4-Extreme

3-High

2-Moderate

1-Slight

0-Insignificant

NFPA RATINGS (SCALE 0-4): Health=3 Fire=2 Reactivity=0
HMIS RATINGS (SCALE 0-4): Health=3 Fire=2 Reactivity=0 PPE=X

Hazard statement(s) from Section 2 and 3:

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

Date of preparation-----> October 25, 2005

Revision Number-----> 1.5

Revision Content-----> Added REACH registration numbers Section 3 and 8

Revision Date-----> December 19, 2018

Prepared by-----> T.G. Fenstermaker, Jr.

Acronyms:

ACGIH	-	American Conference of Governmental Industrial Hygienists
AIHA	-	American Industrial Hygiene Association
ANSI	-	American Nation Standards Institute
API	-	American Petroleum Institute
CERCLA	-	Comprehensive Emergency Response, Compensation, and Liability Act
DOT	-	U.S. Department of Transportation
EPA	-	U.S. Environmental Protection Agency
HMIS	-	Hazardous Materials Information System
IARC	-	International Agency For Research On Cancer
MSHA	-	Mine Safety and Health Administration
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute of Occupational Safety and Health
NOIC	-	Notice of Intended Change (Proposed change to ACGIH TLV)
NTP	-	National Toxicology Program
OPA	-	Oil Pollution Act of 1990

OSHA	-	U.S. Occupational Safety & Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
REL	-	Recommended Exposure Limit (NIOSH)
SARA	-	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short-Term Exposure Limit (generally 15 minutes)
TLV	-	Threshold Limit Value
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average (8hr.)
WHMIS	-	Canadian Workplace Hazardous Materials Information System

This information is furnished without warranty, representation, inducement of license of any kind, except that it is accurate to the best of G.J. Chemical's knowledge, or obtained from sources believed by G.J. Chemical Co., Inc. to be accurate, and G.J. Chemical Co., Inc. does not assume any legal responsibility for use or reliance upon same. Users are encouraged to conduct their own tests. Before using any product, read its label. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.