MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: VINYL ACETATE

TRADE NAMES/SYNONYMS:
MTG MSDS 246; ACETIC ACID VINYL ESTER; ETHENYL ACETATE; 1-ACETOXYETHYLENE; ACETOXYETHYLENE; ACETIC ACID ETHENYL ESTER; VINYL A MONOMER; ACETIC ACID, VINYL ESTER; ACETIC ACID, ETHENYL ESTER; VINYL ACETATE, INHIBITED; UN 1301; C4H6O2; MAT24900; RTECS AK0875000

CHEMICAL FAMILY: esters, carboxylic, aliphatic

CREATION DATE: Jan 24 1989
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: VINYL ACETATE
CAS NUMBER: 108-05-4
PERCENTAGE: >99.9

COMPONENT: INHIBITORS
CAS NUMBER: Not assigned.
PERCENTAGE: <0.1

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=2

EMERGENCY OVERVIEW:
COLOR: colorless
PHYSICAL FORM: liquid
ODOR: sweet odor
MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, central nervous system effects
system depression

**PHYSICAL HAZARDS:** Flammable liquid and vapor. Vapor may cause flash fire. May polymerize. Containers may rupture or explode.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**
**SHORT TERM EXPOSURE:** irritation, lack of sense of smell, difficulty breathing, headache, drowsiness, dizziness, disorientation, loss of coordination
**LONG TERM EXPOSURE:** fatigue, sleep disturbances, emotional disturbances, effects on the brain, cancer

**SKIN CONTACT:**
**SHORT TERM EXPOSURE:** irritation
**LONG TERM EXPOSURE:** irritation

**EYE CONTACT:**
**SHORT TERM EXPOSURE:** irritation (possibly severe)
**LONG TERM EXPOSURE:** irritation

**INGESTION:**
**SHORT TERM EXPOSURE:** vomiting, stomach pain, headache, drowsiness, dizziness, emotional disturbances, loss of coordination, unconsciousness
**LONG TERM EXPOSURE:** no information on significant adverse effects

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### 4. FIRST AID MEASURES

**INHALATION:** If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

**SKIN CONTACT:** Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

**EYE CONTACT:** Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**INGESTION:** Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

**NOTE TO PHYSICIAN:** For ingestion, consider gastric lavage and activated charcoal slurry.

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### 5. FIRE FIGHTING MEASURES

**FIRE AND EXPLOSION HAZARDS:** Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.
EXTINGUISHING MEDIA: alcohol-resistant foam, carbon dioxide, regular dry chemical, water, alcohol-resistant foam

Large fires: Use alcohol-resistant foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

FLASH POINT: 18 F (-8 C) (TCC)
LOWER FLAMMABLE LIMIT: 2.6%
UPPER FLAMMABLE LIMIT: 13.4%
AUTOIGNITION: 756 F (402 C)
FLAMMABILITY CLASS (OSHA): IB

6. ACCIDENTAL RELEASE MEASURES

AIR RELEASE:
Reduce vapors with water spray.

SOIL RELEASE:
Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers. Dike for later disposal. Absorb with sand or other non-combustible material. Collect with absorbent into suitable container.

WATER RELEASE:
Cover with absorbent sheets, spill-control pads or pillows. Neutralize. Collect with absorbent into suitable container. Absorb with activated carbon. Remove trapped material with suction hoses. Collect spilled material using mechanical equipment.

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).
7. HANDLING AND STORAGE


8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

VINYL ACETATE:
10 ppm (35 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)
20 ppm (70 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
10 ppm ACGIH TWA
15 ppm ACGIH STEL
4 ppm (15 mg/m3) NIOSH recommended ceiling 15 minute(s)

VENTILATION: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

40 ppm
Any air-purifying half-mask respirator equipped with organic vapor cartridge(s).
Any supplied-air respirator.

100 ppm
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with organic vapor cartridge(s).

200 ppm
Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted
organic vapor canister.
Any powered, air-purifying respirator with a tight-fitting facepiece and organic vapor cartridge(s).
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.

4000 ppm
Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.
Emergency or planned entry into unknown concentrations or IDLH conditions -
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.
Any appropriate escape-type, self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL STATE</td>
<td>liquid</td>
</tr>
<tr>
<td>APPEARANCE</td>
<td>clear</td>
</tr>
<tr>
<td>COLOR</td>
<td>colorless</td>
</tr>
<tr>
<td>ODOR</td>
<td>sweet odor</td>
</tr>
<tr>
<td>MOLECULAR WEIGHT</td>
<td>86.09</td>
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<tr>
<td>MOLECULAR FORMULA</td>
<td>C-H3-C-O2-C-H-C-H2</td>
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<tr>
<td>BOILING POINT</td>
<td>162 F (72 C)</td>
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<tr>
<td>FREEZING POINT</td>
<td>-135 F (-93 C)</td>
</tr>
<tr>
<td>VAPOR PRESSURE</td>
<td>100 mmHg @ 23.3 C</td>
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<tr>
<td>VAPOR DENSITY (air=1)</td>
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</tr>
<tr>
<td>SPECIFIC GRAVITY (water=1)</td>
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<tr>
<td>WATER SOLUBILITY</td>
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<tr>
<td>PH</td>
<td>Not available</td>
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<tr>
<td>VOLATILITY</td>
<td>Not available</td>
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<tr>
<td>ODOR THRESHOLD</td>
<td>0.12 ppm</td>
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<tr>
<td>EVAPORATION RATE</td>
<td>8.89 (butyl acetate=1)</td>
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<tr>
<td>VISCOSITY</td>
<td>0.432 cP @ 20 C</td>
</tr>
<tr>
<td>COEFFICIENT OF WATER/OIL DISTRIBUTION</td>
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<tr>
<td>SOLVENT SOLUBILITY</td>
<td>Soluble: alcohol, ether, acetone, benzene, chloroform, organic solvents</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

REACTIVITY: Polymerizes with evolution of heat. Avoid contact with air, light, water or storage and use above room temperature. Closed containers may rupture violently.
CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: acids, bases, metal oxides, amines, combustible materials, oxidizing materials, peroxides

HAZARDOUS DECOMPOSITION: Thermal decomposition products: oxides of carbon

POLYMERIZATION: May polymerize. Avoid contact with heat, light, air, water or incompatible materials.

11. TOXICOLOGICAL INFORMATION

VINYL ACETATE:
IRRITATION DATA: 22 ppm eyes-human
TOXICITY DATA: 11400 mg/m³/4 hour(s) inhalation-rat LC50; 2335 mg/kg skin-rabbit LD50; 2900 mg/kg oral-rat LD50
LOCAL EFFECTS: Irritant: inhalation, skin, eye
ACUTE TOXICITY LEVEL:
Moderately Toxic: inhalation, ingestion
Slightly Toxic: dermal absorption
TARGET ORGANS: central nervous system
TUMORIGENIC DATA: Available.
MUTAGENIC DATA: Available.
REPRODUCTIVE EFFECTS DATA: Available.
ADDITIONAL DATA: Alcohol may enhance the toxic effects.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:
FISH TOXICITY: 14000 ug/L 96 hour(s) LC50 (Mortality) Fathead minnow (Pimephales promelas)
INVERTEBRATE TOXICITY: 330000-1000000 ug/L 48 hour(s) LC50 (Mortality) Starfish (Asterias rubens)
ALGAL TOXICITY: 9500 ug/L 48 hour(s) (Population Growth) Cryptomonad (Chilomonas paramecium)

13. DISPOSAL CONSIDERATIONS
Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Vinyl acetate, stabilized
ID NUMBER: UN1301
HAZARD CLASS OR DIVISION: 3
PACKING GROUP: II
LABELING REQUIREMENTS: 3

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Vinyl acetate, stabilized
UN NUMBER: UN1301
CLASS: 3
PACKING GROUP/CATEGORY: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
VINYL ACETATE: 5000 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B):
VINYL ACETATE: 1000 LBS TPQ

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C):
VINYL ACETATE: 5000 LBS RQ

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: No
FIRE: Yes
REACTIVE: Yes
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
VINYL ACETATE

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: BD2

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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