

# 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: ACETYLACETONE**

**TRADE NAMES/SYNONYMS:**

ACETOACETONE; DIACETYLMETHANE; PENTANEDIONE; 2,4-PENTANEDIONE; 2,4-DIOXOPENTANE; C5H8O2; MAT00270; RTECS SA1925000

**CHEMICAL FAMILY:** ketones, aliphatic

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Dec 11 2008

## 2. COMPOSITION, INFORMATION ON INGREDIENTS

**COMPONENT:** ACETYLACETONE

**CAS NUMBER:** 123-54-6

**PERCENTAGE:** 100.0

## 3. HAZARDS IDENTIFICATION

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



**EMERGENCY OVERVIEW:**

**CHANGE IN APPEARANCE:** darkens on exposure to light

**COLOR:** colorless to yellow

**PHYSICAL FORM:** liquid

**MAJOR HEALTH HAZARDS:** harmful on contact with the skin or swallowed, respiratory tract irritation, skin irritation, eye irritation, central nervous system depression

**PHYSICAL HAZARDS:** Flammable liquid and vapor. Vapor may cause flash fire.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**SHORT TERM EXPOSURE:** irritation, nausea, vomiting, headache, symptoms of drunkenness

**LONG TERM EXPOSURE:** no information on significant adverse effects

**SKIN CONTACT:**

**SHORT TERM EXPOSURE:** irritation

**LONG TERM EXPOSURE:** same as effects reported in short term exposure

**EYE CONTACT:**

**SHORT TERM EXPOSURE:** irritation

**LONG TERM EXPOSURE:** same as effects reported in short term exposure

**INGESTION:**

**SHORT TERM EXPOSURE:** nausea, vomiting, stomach pain, headache, symptoms of drunkenness

**LONG TERM EXPOSURE:** no information on significant adverse effects

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## 4. FIRST AID MEASURES

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**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

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**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 above flash point.

**EXTINGUISHING MEDIA:** alcohol-resistant foam, carbon dioxide, regular dry chemical, water, alcohol-resistant foam

Large fires: Use regular 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). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**FLASH POINT:** 93 F (34 C) (CC)

**LOWER FLAMMABLE LIMIT:** 2.4%

**UPPER FLAMMABLE LIMIT:** 11.6%

**AUTOIGNITION:** 644 F (340 C)

**FLAMMABILITY CLASS (OSHA):** IC

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## 6. ACCIDENTAL RELEASE MEASURES

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### **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.

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## 7. HANDLING AND STORAGE

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**STORAGE:** Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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### **EXPOSURE LIMITS:**

#### **ACETYLACETONE:**

No occupational exposure limits established.

**VENTILATION:** Provide local exhaust or process enclosure 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:** Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

**For Unknown Concentrations or Immediately Dangerous to Life or Health -**

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.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** liquid

**COLOR:** colorless to yellow

**CHANGE IN APPEARANCE:** darkens on exposure to light

**ODOR:** Not available

**MOLECULAR WEIGHT:** 100.12

**MOLECULAR FORMULA:** C-H<sub>3</sub>-C-O-C-H<sub>2</sub>-C-O-C-H<sub>3</sub>

**BOILING POINT:** 282-284 F (139-140 C)

**FREEZING POINT:** -9 F (-23 C)

**VAPOR PRESSURE:** 7 mmHg @ 20 C

**VAPOR DENSITY (air=1):** 3.5

**SPECIFIC GRAVITY (water=1):** 0.9721 @ 25 C

**WATER SOLUBILITY:** 12.5%

**PH:** Not available

**VOLATILITY:** Not available

**ODOR THRESHOLD:** 0.01 ppm

**EVAPORATION RATE:** 0.75 (butyl acetate=1)

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

**SOLVENT SOLUBILITY:**

**Soluble:** alcohol, ether, chloroform, acetone, benzene, acetic acid

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## 10. STABILITY AND REACTIVITY

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**REACTIVITY:** Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**INCOMPATIBILITIES:** oxidizing materials

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition products: oxides of carbon

**POLYMERIZATION:** Will not polymerize.

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## 11. TOXICOLOGICAL INFORMATION

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**ACETYLACETONE:**

**IRRITATION DATA:** 10 mg/24 hour(s) open skin-rabbit; 488 mg open skin-rabbit mild; 20 mg eyes-rabbit severe; 11.2 ml/6 hour(s)-intermittent skin-rabbit mild; 33.6 ml/6 hour(s)-intermittent skin-rabbit moderate; 11.2 ml/2 day(s)-intermittent skin-rabbit moderate

**TOXICITY DATA:** 810 ul/kg skin-rabbit LD50; 55 mg/kg oral-rat LD50

**LOCAL EFFECTS:**

Irritant: inhalation, skin, eye

**ACUTE TOXICITY LEVEL:**

Toxic: dermal absorption, ingestion

**TARGET ORGANS:** central nervous system

**MUTAGENIC DATA:** Available.

**REPRODUCTIVE EFFECTS DATA:** Available.

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## 12. ECOLOGICAL INFORMATION

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**ECOTOXICITY DATA:**

**FISH TOXICITY:** 74300 ug/L 96 hour(s) LC50 (Mortality) Bluegill (*Lepomis macrochirus*)

**INVERTEBRATE TOXICITY:** <870 ug/L 7 hour(s) MATC (Reproduction) Water flea (*Ceriodaphnia reticulata*)

**ALGAL TOXICITY:** 8500 ug/L 8 hour(s) (Population Growth) Blue-green algae (*Anacystis aeruginosa*)

**OTHER TOXICITY:** 73900 ug/L 96 hour(s) LC50 (Mortality) Bullfrog (*Rana catesbeiana*)

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## 13. DISPOSAL CONSIDERATIONS

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

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## 14. TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101:**  
**PROPER SHIPPING NAME:** Flammable liquids, n.o.s. (ACETYLACETONE)  
**ID NUMBER:** UN1993  
**HAZARD CLASS OR DIVISION:** 3  
**PACKING GROUP:** III  
**LABELING REQUIREMENTS:** 3

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:**  
**SHIPPING NAME:** Flammable liquid, n.o.s. (ACETYLACETONE)  
**UN NUMBER:** UN1993  
**CLASS:** 3  
**PACKING GROUP/CATEGORY:** III

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## 15. REGULATORY INFORMATION

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### U.S. REGULATIONS:

**CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):** Not regulated.

**SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B):** Not regulated.

**SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C):** Not regulated.

**SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):**

ACUTE: Yes

CHRONIC: No

FIRE: Yes

REACTIVE: No

SUDDEN RELEASE: No

**SARA TITLE III SECTION 313 (40 CFR 372.65):** Not regulated.

**OSHA PROCESS SAFETY (29 CFR 1910.119):** Not regulated.

### STATE REGULATIONS:

**California Proposition 65:** Not regulated.

### CANADIAN REGULATIONS:

**WHMIS CLASSIFICATION:** Not determined.

### NATIONAL INVENTORY STATUS:

**U.S. INVENTORY (TSCA):** Listed on inventory.

**TSCA 12(b) EXPORT NOTIFICATION:**

**2,4-PENTANEDIONE**  
**CAS NUMBER:** 123-54-6  
**SECTION 5**

**CANADA INVENTORY (DSL/NDSL):** Not determined.

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## 16. OTHER INFORMATION

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