

Material Safety Data Sheet

Acetyl acetone

ACC# 00270

Section 1 - Chemical Product and Company Identification

MSDS Name: Acetyl acetone

Catalog Numbers: AC129960000, AC129960010, AC129960050, AC129962500, AC129965000, A25-500, NC9504922

Synonyms: 2,4-Pentanedione; Acetylacetone.

Company Identification:

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
123-54-6	Pentadione	100	204-634-0

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless or slight yellow liquid. Flash Point: 34 deg C.

Warning! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation. Harmful if swallowed or absorbed through the skin. May cause central nervous system depression. May cause fetal effects based upon animal studies.

Target Organs: Central nervous system.

Potential Health Effects

Eye: Causes eye irritation. May cause chemical conjunctivitis and corneal damage.

Skin: Causes skin irritation. Harmful if absorbed through the skin. Chronic exposure may cause chelation with iron and other soluble metals leading to deficiencies. Exposure to low concentrations may be cumulative. May cause irritation and

dermatitis. May cause cyanosis of the extremities.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause effects similar to those for inhalation exposure. Ingestion of large amounts may cause CNS depression.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. May cause burning sensation in the chest.

Chronic: Animal studies have reported that fetal effects/abnormalities may occur when maternal toxicity is seen. Chronic exposure may cause chelation with iron and other soluble metals leading to deficiencies. Exposure to low concentrations may be cumulative. Laboratory experiments have resulted in mutagenic effects.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 34 deg C (93.20 deg F)

Autoignition Temperature: 340 deg C (644.00 deg F)

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 2; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Pentadione	none listed	none listed	none listed

OSHA Vacated PELs: Pentadione: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: colorless or slight yellow

Odor: putrid odor

pH: Not available.

Vapor Pressure: 6 mm Hg @ 20 deg C

Vapor Density: 3.5 (Air=1)

Evaporation Rate: 0.75 (n-butyl acetate=1)

Viscosity: Not available.

Boiling Point: 139 - 141 deg C

Freezing/Melting Point: -23 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: 0.973

Molecular Formula: C₅H₈O₂

Molecular Weight: 100.12

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, light, ignition sources, excess heat.

Incompatibilities with Other Materials: Oxidizing agents, strong reducing agents, strong bases.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 123-54-6: SA1925000

LD50/LC50:

CAS# 123-54-6:

Draize test, rabbit, eye: 20 mg Severe;

Draize test, rabbit, skin: 11.2 mL/6H (Intermittent) Mild;

Draize test, rabbit, skin: 33.6 mL/6H (Intermittent) Moderate;

Draize test, rabbit, skin: 11.2 mL/2D (Intermittent) Moderate;

Oral, mouse: LD₅₀ = 951 mg/kg;

Oral, rat: LD₅₀ = 55 mg/kg;

Oral, rat: LD₅₀ = 55 mg/kg;

Skin, rabbit: LD50 = 810 μ L/kg;

Carcinogenicity:

CAS# 123-54-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: Inhalation, rat: TC_{Lo} = 398 ppm/6H (female 6-15 day(s) after conception) Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).

Reproductive Effects: No information found

Mutagenicity: Dominant Lethal Test: Inhalation, rat = 694 ppm/6h/5D.; Mutation in Mammalian Somatic Cells: Hamster, Ovary = 80 mg/L.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. released to soil, acetyl acetone is expected to leach readily (estimated Koc range of 6 to 28) and volatilize from dry soil surfaces. One screening study suggests that biodegradation may be the predominant fate process in water. Although this study is not specific to soil media, it suggests that biodegradation in soil may be important. If released to water, hydrolysis, aquatic oxidation, adsorption to sediment and bioconcentration in aquatic organisms are not expected to be environmentally important removal processes of acetylacetone.

Environmental: Volatilization half-lives of 15 and 170 days have been estimated for a model river (one meter deep) and a model environmental pond, respectively. If released to the atmosphere, acetyl acetone is expected to exist in the vapor phase. Vapor-phase acetyl acetone is expected to degrade by reaction with photochemically produced hydroxyl radicals (estimated half-life of 14 days). Based on its high water solubility, removal from air via wet deposition may occur.

Physical: No information available.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	PENTANE-2,4-DIONE	PENTANE-2,4-DIONE
Hazard Class:	3	3(6.1)
UN Number:	UN2310	UN2310
Packing Group:	III	III
Additional Info:		FP 34C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 123-54-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

CAS# 123-54-6: Section 5, 1 % de minimus concentration

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 123-54-6: immediate, delayed, fire.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 123-54-6 can be found on the following state right to know lists: New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN

Risk Phrases:

R 10 Flammable.

R 22 Harmful if swallowed.

Safety Phrases:

S 21 When using do not smoke.

S 23 Do not inhale gas/fumes/vapour/spray.

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 123-54-6: 1

Canada - DSL/NDSL

CAS# 123-54-6 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1B, D2B.

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

Canadian Ingredient Disclosure List

CAS# 123-54-6 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/25/1999

Revision #7 Date: 11/05/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Acetylacetone specifications:

ITEM	TOP GRADE	STANDARD
Appearance	Colorless Transparent Liquid	Colorless Transparent Liquid
Contents %	99.8Min	99.5Min
Acid Contents % (by Acetic acid)	0.1Max	0.15Max
2,4-Hexanedione %	0.01Max	0.02Max
Moisture %	0.1Max	0.15max
Density(20°C)g/cm3	0.970-0.975	0.970-0.975
High Boilers %	0.1Max	0.15Max
Evaporation Residue %	0.01Max	0.01max
Color(Pt-Co)	20Max	30Max
Refractive index	1.450±0.002	1.450±0.002