



# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 07/22/2015

Version 1.5

## SECTION 1. Identification

### Product identifier

Product number	800023
Product name	Acetylacetone for synthesis
CAS-No.	123-54-6

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

Identified uses	Chemical for synthesis
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### Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation   290 Concord Road, Billerica, MA 01821, United States of America   General Inquiries: +1-978-715-4321   Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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## SECTION 2. Hazards identification

### GHS Classification

Flammable liquid, Category 3, H226

Acute toxicity, Category 4, Oral, H302

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Warning

*Hazard Statements*

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

*Precautionary Statements*

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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.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.  
Rinse skin with water/ shower.  
P330 Rinse mouth.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

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### SECTION 3. Composition/information on ingredients

Formula	$\text{CH}_3\text{COCH}_2\text{COCH}_3$	$\text{C}_5\text{H}_8\text{O}_2$ (Hill)
Molar mass	100.12 g/mol	

### Hazardous ingredients

*Chemical Name (Concentration)*

CAS-No.

*Acetylacetone (>= 90 % - <= 100 % )*

123-54-6

Exact percentages are being withheld as a trade secret.

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### SECTION 4. First aid measures

#### Description of first-aid measures

##### *Inhalation*

After inhalation: fresh air. Consult doctor if feeling unwell.

##### *Skin contact*

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

##### *Eye contact*

After eye contact: rinse out with plenty of water.

##### *Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

#### Most important symptoms and effects, both acute and delayed

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Cough, Nausea, Dizziness, irritant effects, Vomiting, Headache, Shortness of breath, respiratory arrest, Unconsciousness

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

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

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## SECTION 5. Fire-fighting measures

### Extinguishing media

*Suitable extinguishing media*

Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapors possible in the event of fire.

### Advice for firefighters

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### Environmental precautions

Do not let product enter drains. Risk of explosion.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

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## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

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### *Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

### **Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store at +15°C to +25°C (+59°F to +77°F).

## **SECTION 8. Exposure controls/personal protection**

### **Exposure limit(s)**

#### *Ingredients*

Basis	Value	Threshold limits	Remarks
<i>Acetylacetone 123-54-6</i>			
ACGIH	Time Weighted Average (TWA): Skin designation:	25 ppm	Can be absorbed through the skin.

### **Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### **Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### *Hygiene measures*

Change contaminated clothing. Application of skin- protective barrier cream recommended. Wash hands after working with substance.

#### *Eye/face protection*

Safety glasses

#### *Hand protection*

full contact:

Glove material: butyl-rubber  
Glove thickness: 0.7 mm  
Break through time: > 480 min

splash contact:

Glove material: Nitrile rubber  
Glove thickness: 0.40 mm  
Break through time: > 30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 730 Camatril® - Velours (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

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This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Other protective equipment:*

Flame retardant antistatic protective clothing.

*Respiratory protection*

required when vapors/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapors of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

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## SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	malodorous
Odor Threshold	No information available.
pH	6 at 200 g/l 68 °F (20 °C)
Melting point	-23 °C
Boiling point/boiling range	280 - 284 °F (138 - 140 °C) at 1,013 hPa
Flash point	93 °F (34 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2.4 %(V)
Upper explosion limit	11.4 %(V)
Vapor pressure	9 hPa at 68 °F (20 °C)
Relative vapor density	3.5
Density	0.97 g/cm <sup>3</sup> at 68 °F (20 °C)

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Relative density	No information available.
Water solubility	200 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 0.40 (experimental) (Lit.) Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	0.6 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	644 °F (340 °C)

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### SECTION 10. Stability and reactivity

#### Reactivity

Vapor/air-mixtures are explosive at intense warming.

#### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

#### Possibility of hazardous reactions

Violent reactions possible with:

Acids, Bases, Amines, Aldehydes, anhydrides, Oxidizing agents, Peroxides, peroxi compounds, Hydrogen fluoride, Halogenated compounds, Cyanides

Risk of ignition or formation of inflammable gases or vapors with:

hydrides, nitrides, Alkali metals

#### Conditions to avoid

Heating.

#### Incompatible materials

Mild steel, Zinc, Copper, Nickel, various plastics

#### Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### Information on toxicological effects

#### *Likely route of exposure*

Inhalation, Eye contact, Skin contact

#### *Acute oral toxicity*

LD50 Rat: 575 mg/kg (External MSDS)

#### absorption

Symptoms: Irritations, Nausea, Vomiting, Unconsciousness

#### *Acute inhalation toxicity*

Symptoms: Dizziness, Headache, Nausea, Unconsciousness, Symptoms may be delayed.

#### *Skin irritation*

Rabbit

Result: No irritation

(External MSDS)

#### *Eye irritation*

Rabbit

Result: No eye irritation

(External MSDS)

#### *Genotoxicity in vivo*

Micronucleus test

Result: positive

(National Toxicology Program)

#### *Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

#### *Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

#### *Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

### Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential

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carcinogen by ACGIH.

### Further information

Systemic effects:

After absorption:

Irritations, Cough, Nausea, Vomiting, Dizziness, Headache, Shortness of breath, respiratory arrest, Unconsciousness

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### Ecotoxicity

*Toxicity to fish*

LC50 Lepomis macrochirus (Bluegill sunfish): 60.1 mg/l; 96 h (ECOTOX Database)

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 75 mg/l; 48 h (ECOTOX Database)

EC5 E.sulcatum: 11 mg/l; 72 h (maximum permissible toxic concentration) (IUCLID)

*Toxicity to algae*

IC5 Scenedesmus quadricauda (Green algae): 2.7 mg/l; 8 d (maximum permissible toxic concentration) (IUCLID)

IC5 M.aeruginosa: 8.5 mg/l; 8 d (IUCLID)

*Toxicity to bacteria*

EC5 Pseudomonas putida: 67 mg/l; 16 h (maximum permissible toxic concentration) (IUCLID)

### Persistence and degradability

*Biodegradability*

79 - 88 %; 28 d

OECD Test Guideline 301C

Readily biodegradable.

*Ratio BOD/ThBOD*

BOD5 5.6 %

(Lit.)

### Bioaccumulative potential

*Partition coefficient: n-octanol/water*

log Pow: 0.40

(experimental)

(Lit.) Bioaccumulation is not expected.

### Mobility in soil

No information available.

*Additional ecological information*

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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## SECTION 14. Transport information

### Land transport (DOT)

UN number	UN 2310
Proper shipping name	PENTANE-2,4-DIONE
Class	3 (6.1)
Packing group	III
Environmentally hazardous	--

### Air transport (IATA)

UN number	UN 2310
Proper shipping name	PENTANE-2,4-DIONE
Class	3 (6.1)
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

### Sea transport (IMDG)

UN number	UN 2310
Proper shipping name	PENTANE-2,4-DIONE
Class	3 (6.1)
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

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## SECTION 15. Regulatory information

### United States of America

#### SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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## Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

## DEA List I

Not listed

## DEA List II

Not listed

## TSCA 12b

### Ingredients

Acetylacetone 123-54-6

## US State Regulations

### Massachusetts Right To Know

#### Ingredients

Acetylacetone

### Pennsylvania Right To Know

#### Ingredients

Acetylacetone

### New Jersey Right To Know

#### Ingredients

Acetylacetone

### California Prop 65 Components

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

## Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

### Labeling

#### Hazard pictograms



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### *Signal Word*

Warning

### *Hazard Statements*

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

### *Precautionary Statements*

Prevention

P210 Keep away from heat.

### **Full text of H-Statements referred to under sections 2 and 3.**

H226

Flammable liquid and vapor.

H302

Harmful if swallowed.

### **Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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