

ALADDIN SCIENTIFIC CORPORATION  
14078 Meridian Parkway, Riverside, CA. 92518

# SAFETY DATA SHEET

Version: v1  
Revision Date: 2025-09-12  
Print Date: 2025-09-13

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifiers

Product name : 2,3-Butanedione  
Product Number : B104603  
Brand : aladdin  
CAS-No. : 431-03-8

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

Identified uses : Laboratory chemicals, Manufacture of substances.

### 1.3 Company

Company : ALADDIN SCIENTIFIC CORPORATION  
Address : 14078 Meridian Parkway,  
Riverside, CA. 92518  
Telephone : +1 (833) 552-7181  
Fax : no data available

### 1.4 Emergency telephone number

CHEMTREC®, Inside the USA : 1-800-424-9300  
CHEMTREC®, Outside the USA :

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

Flammable liquids (Category 2), H225

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

Skin sensitization (Category 1), H317

Specific target organ toxicity - repeated exposure, Inhalation (Category 2), Respiratory system, H373

### 2.2 GHS Label elements, including precautionary statements

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## Pictogram



## Signal word

Danger

## Hazard statement(s)

H225	Highly Flammable liquid and vapor
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H331	Toxic if inhaled
H373	Causes damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

## Precautionary statement(s)

P210	Keep away from heat, hot surface, sparks, open flames and other ignition sources. - 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.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash hands [and ...] thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P321	Specific treatment (see ... on this label).
P330	Rinse mouth.
P302+P352	IF ON SKIN: wash with plenty of water.
P303+P361+P353	IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333+P313	IF SKIN irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use ... to extinguish.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to an approved waste disposal plant.
P264+P265	Wash hands [and ...] thoroughly after handling. Do not touch eyes.

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P301+P317	IF SWALLOWED: Get medical help.
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P317	Get emergency medical help.
P332+P317	If skin irritation occurs: Get medical help.
P316	Get emergency medical help immediately.
P319	Get medical help if you feel unwell.

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Synonyms	: Biacetyl Diacetyl Butane-2,3-dione 2,3-Diketobutane
Formula	: C <sub>4</sub> H <sub>6</sub> O <sub>2</sub>
Molecular weight	: 86.09
CAS No.	: 431-03-8
EC-NO.	: no data available

Component	Classification	Concentration
<b>2,3-Butanedione</b>	no data available	analytical standard, ≥99% (GC)

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General advice

Consult a physician. Show this material safety data sheet to the doctor in attendance.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### In case of eye contact

Flush eyes with water as a precaution.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

no data available

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

no data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

no data available

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides Combustible.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

Use water spray to cool unopened containers.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

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

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Store in a cool place. Keep the container tightly closed and store in a dry and ventilated place.

### 7.3 Specific end use(s)

no data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### 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. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU)2016/425 and the standard EN 374 derived from it.

##### Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection,use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

##### Control of environmental exposure

If safety requires, prevent further leakage or spillage. Do not let the product enter the sewer.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a) Appearance	form: Liquid color: Faint Yellow to Very Dark Yellow
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available

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e) Melting point/freezing point	-4 °C
f) Initial boiling point and boiling range	88°C
g) Flash point	7 °C
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	no data available
l) Vapour density	no data available
m) Relative density	0.98
n) Water solubility	Miscible with water.
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties N	no data available
t) Oxidizing properties N	no data available

## 9.2 Other safety information

no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Violent reactions possible with: alkalines Acids Risk of ignition or formation of inflammable gases or vapours with: strong oxidising agents

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

no data available

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## SECTION 11: Toxicological information

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## 11.1 Information on toxicological effects

### Acute toxicity

LD50 Oral - Rat - 1.580 mg/kg

Remarks: (RTECS)

LC50 Inhalation - Rat - 4 h - 2,25 - 5,2 mg/l

Remarks: (External MSDS)

Symptoms: Possible damages:, Irritation symptoms in the respiratory tract.

LD50 Dermal - Rabbit - > 5.000 mg/kg

Remarks: (RTECS)

### Skin corrosion/irritation

Skin - Rabbit Result: Irritations Remarks: (External MSDS)

### Serious eye damage/eye irritation

no data available

### Respiratory or skin sensitisation

no data available

### Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): micronucleus. Result: negative Remarks: (National Toxicology Program)

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### Specific target organ toxicity - single exposure

no data available

### Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure. - Respiratory system

### Aspiration hazard

no data available

### Additional Information

RTECS: EK2625000

Nausea, Headache, Vomiting After absorption of toxic quantities: Headache Nausea Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - 46 - 100 mg/l - 96 h

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Remarks: (External MSDS)

Toxicity to bacteria

Remarks: (Hommel) (butanedione)

**12.2 Persistence and degradability**

Biodegradability Result: - Readily biodegradable.

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

no data available

**12.6 Other adverse effects**

no data available

**SECTION 13:****13.1 Disposal considerations****Product**

Recycle to process, if possible. Consult your local regional authorities and an expert of disposal. You may be able to dissolve or mix material with a combustible solvent and little by little burn in a chemical incinerator equipped with an afterburner and scrubber system. If a large amount of the substance is burned at a time, an explosion may occur.

Observe all federal, state and local regulations when disposing of the substance.

**Contaminated packaging**

Dispose of as unused product.

**SECTION 14: Transport information****DOT (US)**

UN number: 2346

Proper shipping name: Butanedione

Packing group: II

Reportable Quantity(RQ): no data available

Class: 3

Poison Inhalation Hazard: no data available

Environmental Hazards: no

**IMDG**

UN number: 2346

Proper shipping name: Butanedione

Packing group: II

EMS-No: no data available

**IATA**

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UN number: 2346

Packing group: II

Class: 3

Proper shipping name: Butanedione

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## SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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## SECTION 16: Other information

**Prepared By**

Regulatory Affairs

ALADDIN SCIENTIFIC CORPORATION

Email: QualityAssurance@aladdinsci.com

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**Revision Summary**

SDS sections updated v1

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