

## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### NATURAL DIACETYL

Revision date: 02/20/2024

Product code: 237000US

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## 1. Identification

### Product identifier

NATURAL DIACETYL

Substance name: NATURAL DIACETYL  
 CAS No: 431-03-8

### Recommended use of the chemical and restrictions on use

#### Use of the substance/mixture

For Flavour use for food and feed only

### Details of the supplier of the safety data sheet

Company name:	Axxence Aromatic GmbH	
Street:	Tackenweide 28	
Place:	D-46446 Emmerich am Rhein	
Telephone:	+ 49 2822 68561 0	Telefax: + 49 2822 68561 39
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Internet:	www.axxence.de	
Responsible Department:	QM - Regulatory Affairs - Safety Management	

**Emergency phone number:** +49 2822 68561 99

## 2. Hazard(s) identification

### Classification of the chemical

#### **29 CFR Part 1910.1200**

Flammable liquids: Flam. Liq. 2  
 Acute toxicity: Acute Tox. 3 (inhalation)  
 Acute toxicity: Acute Tox. 4 (oral)  
 Skin corrosion/irritation: Skin Irrit. 2  
 Serious eye damage/eye irritation: Eye Dam. 1  
 Respiratory or skin sensitization: Skin Sens. 1  
 Specific target organ toxicity repeated or prolonged exposure: STOT RE 2

### Label elements

#### **29 CFR Part 1910.1200**

**Signal word:** Danger

**Pictograms:**



### **Hazard statements**

Highly flammable liquid and vapor  
 Harmful if swallowed  
 Causes skin irritation  
 May cause an allergic skin reaction  
 Causes serious eye damage  
 Toxic if inhaled  
 May cause damage to organs through prolonged or repeated exposure

### **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 Keep container tightly closed.

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Ground/bond container and receiving equipment.  
 Use explosion-proof electrical/ventilating/lighting equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Do not breathe dust/fume/gas/mist/vapors/spray.  
 Wash hands thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Use only outdoors or in a well-ventilated area.  
 Contaminated work clothing must not be allowed out of the workplace.  
 Wear protective gloves/protective clothing/eye protection/face protection.  
 If swallowed: Call a poison center/doctor if you feel unwell.  
 Rinse mouth.  
 If on skin: Wash with plenty of Water and soap.  
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 If skin irritation or rash occurs: Get medical advice/attention.  
 Take off contaminated clothing and wash it before reuse.  
 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 Call a poison center/doctor.  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
 Continue rinsing.  
 Immediately call a poison center/doctor.  
 Get medical advice/attention if you feel unwell.  
 In case of fire: Use Water spray jet to extinguish.  
 Keep container tightly closed.  
 Store in a well-ventilated place. Keep cool.  
 Store locked up.  
 Dispose of contents/container to Organic waste.

### 3. Composition/information on ingredients

#### Substances

Sum formula: C4 H6 O2  
 Molecular weight: 86,09

#### Relevant ingredients

CAS No	Components	Quantity
431-03-8	NATURAL DIACETYL	100 %

### 4. First-aid measures

#### Description of first aid measures

##### **General information**

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.

##### **After inhalation**

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

##### **After contact with skin**

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

##### **After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

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**After ingestion**

Observe risk of aspiration if vomiting occurs.

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

No information available.

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

Treat symptomatically.

**5. Fire-fighting measures****Extinguishing media****Suitable extinguishing media**Water spray jet, Carbon dioxide (CO<sub>2</sub>), Foam, Extinguishing powder.**Specific hazards arising from the chemical**

Highly flammable. Vapors may form explosive mixtures with air. Heating causes rise in pressure with risk of bursting.

**Special protective equipment and precautions for fire-fighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

**Additional information**

Use water spray/stream to protect personnel and to cool endangered containers. Suppress gases/vapors/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

**6. Accidental release measures****Personal precautions, protective equipment and emergency procedures****General advice**

Remove all sources of ignition.

**For emergency responders**

Suppress gases/vapors/mists with water spray jet. Wear a self-contained breathing apparatus and chemical protective clothing.

**Environmental precautions**

Do not allow uncontrolled discharge of product into the environment. Explosion risk.

**Methods and material for containment and cleaning up****For cleaning up**

Ventilate affected area.

**Other information**

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

**Reference to other sections**

Safe handling: see section 7

Personal protection equipment (PPE): see section 8

Disposal: see section 13

**7. Handling and storage****Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fume/vapor/spray.

**Advice on protection against fire and explosion**

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.

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Vapors may form explosive mixtures with air.

#### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

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

##### Requirements for storage rooms and vessels

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only. Provide adequate ventilation as well as local exhaust at critical locations. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

##### Hints on joint storage

Do not store together with: Oxidizing agent. Pyrophoric or self-heating substances.

## 8. Exposure controls/personal protection

#### Control parameters

#### Exposure limits

CAS No	Substance	ppm	mg/m <sup>3</sup>	f/cc	Category	Origin
431-03-8	Diacetyl	0.01			TWA (8 h)	ACGIH-2023
		0.02			STEL (15 min)	ACGIH-2023

#### Exposure controls



#### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fume/vapor/spray.

#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Suitable eye protection: goggles.

##### Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Butyl caoutchouc (butyl rubber) 0,5mm

##### Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing . .

##### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

##### Thermal hazards

Flame-retardant protective clothing. Wear anti-static footwear and clothing

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## 9. Physical and chemical properties

### Information on basic physical and chemical properties

Physical state:	Liquid	
Color:	yellow	
Melting point/freezing point:		-2 °C
Boiling point or initial boiling point and boiling range:		88 °C
Flammability:		not determined
Lower explosion limits:		2,4 vol. %
Upper explosion limits:		13 vol. %
Flash point:		6 °C
Auto-ignition temperature:		345 °C
Decomposition temperature:		not determined
pH-Value:		3,2
Viscosity / kinematic:		not applicable
Water solubility: (at 25 °C)		200 g/L
Solubility in other solvents		not determined
Partition coefficient n-octanol/water:		-1,34
Vapor pressure: (at 20 °C)		58,2 hPa
Vapor pressure: (at 50 °C)		254 hPa
Density (at 20 °C):		0,99 g/cm <sup>3</sup>
Relative vapour density: (at 20 °C)		2,97
Particle characteristics:		not applicable

### Other information

#### **Information with regard to physical hazard classes**

##### Explosive properties

The product is not: Explosive. not hazard of explosion according to EU A.14

##### Oxidizing properties

The product is not: oxidising.

#### **Other safety characteristics**

Evaporation rate:		not determined
Solvent content:		0%
Solid content:		0%

## 10. Stability and reactivity

### Reactivity

Highly flammable.

### Chemical stability

The product is stable under storage at normal ambient temperatures.

### Possibility of hazardous reactions

No known hazardous reactions.

### Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapors may form explosive mixtures with air.

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**Incompatible materials**

No information available.

**Hazardous decomposition products**

No known hazardous decomposition products.

## 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**

Toxic if inhaled

Harmful if swallowed

CAS No	Components					
	Exposure route	Dose	Species	Source	Method	
431-03-8	NATURAL DIACETYL					
	oral	LD50 1580 mg/kg	Rat	Gestis / Merck		
	dermal	LD50 >5000 mg/kg	Rabbit	Gestis / Merck		
	inhalation (4 h) vapour	LC50 3,7 mg/l	Rat	Gestis / Merck		
	inhalation dust/mist	ATE 0,5 mg/l				

**Irritation and corrosivity**

Causes skin irritation

Causes serious eye damage

**Sensitizing effects**

May cause an allergic skin reaction (NATURAL DIACETYL)

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**Specific target organ toxicity (STOT) - single exposure**

Based on available data, the classification criteria are not met.

**Specific target organ toxicity (STOT) - repeated exposure**

May cause damage to organs through prolonged or repeated exposure (NATURAL DIACETYL)

Carcinogenicity (OSHA): Not listed.

Carcinogenicity (IARC): Not listed.

Carcinogenicity (NTP): Not listed.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

## 12. Ecological information

**Ecotoxicity**

The product is not: Ecotoxic.

**Persistence and degradability**

The product has not been tested.

**Bioaccumulative potential**

The product has not been tested.

**Mobility in soil**

The product has not been tested.

**Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

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#### Other adverse effects

No information available.

#### Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

### 13. Disposal considerations

#### Waste treatment methods

##### Disposal recommendations

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

##### Contaminated packaging

Hazardous waste according to Directive 2008/98/EC (waste framework directive). Handle contaminated packages in the same way as the substance itself.

### 14. Transport information

#### **U.S. DOT 49 CFR 172.101**

<u>UN number or ID number:</u>	UN 2346
<u>Proper shipping name:</u>	BUTANEDIONE
<u>Transport hazard class(es):</u>	3
<u>Packing group:</u>	II
Hazard label:	3



#### **Marine transport (IMDG)**

<u>UN number or ID number:</u>	UN 2346
<u>UN proper shipping name:</u>	BUTANEDIONE
<u>Transport hazard class(es):</u>	3
<u>Packing group:</u>	II
Hazard label:	3



Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-D

#### **Air transport (ICAO-TI/IATA-DGR)**

<u>UN number or ID number:</u>	UN 2346
<u>UN proper shipping name:</u>	BUTANEDIONE
<u>Transport hazard class(es):</u>	3
<u>Packing group:</u>	II
Hazard label:	3



Limited quantity Passenger:	1 L
Passenger LQ:	Y341
Excepted quantity:	E2

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IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L

**Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**Special precautions for user**

Warning: Combustible liquid.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

**15. Regulatory information****U.S. Regulations****National regulatory information**

SARA Section 311/312 Hazards:

NATURAL DIACETYL (431-03-8): Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

**State Regulations****Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65, State of California)**

This product can not expose you to chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**16. Other information****Changes**

Revision date: 02/20/2024

Revision No: 102

This data sheet contains changes from the previous version in section(s): 2.



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**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
VOC: Volatile Organic Compounds  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>  
EC/EEC: European Community/European Economic Community  
EU: European Union  
M-factor: Multiplication factor  
IATA: International Air Transport Association  
DGR: Dangerous Goods Regulations  
ICAO: International Civil Aviation Organization  
TI: Technical Instructions  
VOC: volatile organic compound  
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

**Other data**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.