

Safety Data Sheet

according to UN GHS (ST/SG/AC.10/11/Rev.9)

NATURAL DIACETYL

Revision date: 20.02.2024

Product code: 237000WW

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

1.1. Product identifier

NATURAL DIACETYL

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

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

Use of the substance/mixture

For Flavour use for food and feed only

1.3. 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 |
| E-mail: | info@axxence.com | |
| Contact person: | Andreas Goertz | Telephone: + 49 2822 68561 143 |
| E-mail: | andreas.goertz@axxence.com | |
| Internet: | www.axxence.de | |
| Responsible Department: | QM - Regulatory Affairs - Safety Management | |

1.4. Emergency telephone number:

+49 2822 68561 99

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

UN GHS (ST/SG/AC.10/11/Rev.9)

Flammable liquid: 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 sensitisation: Skin Sens. 1
 Specific target organ toxicity - repeated exposure: STOT RE 2

2.2. Label elements

UN GHS (ST/SG/AC.10/11/Rev.9)

Signal word: Danger

Pictograms:



Hazard statements

| | |
|------|--|
| H225 | Highly flammable liquid and vapour. |
| 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 | May cause damage to organs through prolonged or repeated exposure. |

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

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| | |
|----------------|---|
| | smoking. |
| P233 | Keep container tightly closed. |
| P240 | Ground and bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/lighting equipment. |
| P242 | Use non-sparking tools. |
| P243 | Take action to prevent static discharges. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P264+P265 | Wash hands [and ...] thoroughly after handling. Do not touch eyes. |
| 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/hearing protection. |
| P301+P317 | IF SWALLOWED: Get medical help. |
| P330 | Rinse mouth. |
| P302+P352 | IF ON SKIN: Wash with plenty of Water and soap. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| P333+P317 | If skin irritation or rash occurs: Get medical help. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P316 | Get emergency medical help immediately. |
| 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 medical help. |
| P319 | Get medical help if you feel unwell. |
| P370+P378 | In case of fire: Use Water spray jet to extinguish. |
| P233 | Keep container tightly closed. |
| P403+P235 | Store in a well-ventilated place. Keep cool. |
| P405 | Store locked up. |
| P501 | Dispose of contents/container to . |

2.3. Other hazards

This substance is not listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH. This substance is not identified as SVHC (substance of very high concern) and is not subject to authorisation according to Annex XIV of REACH.

SECTION 3: Composition/information on ingredients

3.1. Substances

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

Relevant ingredients

| CAS No | Chemical name | Quantity |
|----------|---|----------|
| | Classification (UN GHS (ST/SG/AC.10/11/Rev.9)) | |
| 431-03-8 | NATURAL DIACETYL | 100 % |
| | Flam. Liq. 2, Acute Tox. 3, Acute Tox. 4, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, STOT RE 2; H225 H331 H302 H315 H318 H317 H373 | |

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

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

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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.

After ingestion

Observe risk of aspiration if vomiting occurs.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray jet, Carbon dioxide (CO₂), Foam, Extinguishing powder.

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

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

Additional information

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Remove all sources of ignition.

For emergency responders

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

6.2. Environmental precautions

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

6.3. 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.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

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

Advice on protection against fire and explosion

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

7.2. 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 exhaustion 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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit values

| CAS No | Name of agent | ppm | mg/m ³ | fib/cm ³ | Category | Origin |
|----------|-----------------------|------|-------------------|---------------------|---------------|--------|
| 431-03-8 | Diacetyl; Butanedione | 0.02 | 0.07 | | TWA (8 h) | |
| | | 0.1 | 0.36 | | STEL (15 min) | |

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/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

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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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | | |
|---|--------|------------------------|
| Physical state: | Liquid | |
| Colour: | 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 |
| Vapour pressure: (at 20 °C) | | 58,2 hPa |
| Vapour pressure: (at 50 °C) | | 254 hPa |
| Density (at 20 °C): | | 0,99 g/cm ³ |
| Relative vapour density: (at 20 °C) | | 2,97 |
| Particle characteristics: | | not applicable |

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

The product is not: Explosive. not explosive 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% |

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable.

10.2. Chemical stability

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The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No known hazardous reactions.

10.4. Conditions to avoid

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

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Toxic if inhaled.

Harmful if swallowed.

| CAS No | Chemical name | | | | |
|----------|-------------------------|------------------|---------|----------------|--------|
| | 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.

Sensitising 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.

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

This substance is not listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH. This substance is not identified as SVHC (substance of very high concern) and is not subject to authorisation according to Annex XIV of REACH.

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

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12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

| CAS No | Chemical name | Log Pow |
|----------|------------------|---------|
| 431-03-8 | NATURAL DIACETYL | -1,34 |

12.4. Mobility in soil

The product has not been tested.

12.6. Endocrine disrupting properties

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

12.7. 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.

SECTION 13: Disposal considerations

13.1. 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.

SECTION 14: Transport information

Marine transport (IMDG)

| | |
|--|-------------|
| <u>14.1. UN number or ID number:</u> | UN 2346 |
| <u>14.2. UN proper shipping name:</u> | BUTANEDIONE |
| <u>14.3. Transport hazard class(es):</u> | 3 |
| <u>14.4. 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>14.1. UN number or ID number:</u> | UN 2346 |
| <u>14.2. UN proper shipping name:</u> | BUTANEDIONE |
| <u>14.3. Transport hazard class(es):</u> | 3 |
| <u>14.4. Packing group:</u> | II |
| Hazard label: | 3 |



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| | | |
|--|------|------|
| Limited quantity Passenger: | 1 L | |
| Passenger LQ: | Y341 | |
| Excepted quantity: | E2 | |
| IATA-packing instructions - Passenger: | | 353 |
| IATA-max. quantity - Passenger: | | 5 L |
| IATA-packing instructions - Cargo: | | 364 |
| IATA-max. quantity - Cargo: | | 60 L |

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

National regulatory information

| | |
|--------------------------------|---|
| Employment restrictions: | Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. |
| Skin resorption/Sensitization: | Causes allergic hypersensitivity reactions. |

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 2,8.

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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: Multiplying 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).

Further Information

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.