

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NATURAL ISOBUTYL ALCOHOL

Revision date: 05.02.2024

Product code: 217900

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

1.1. Product identifier

NATURAL ISOBUTYL ALCOHOL

| | |
|-----------------|--------------------------|
| Substance name: | NATURAL ISOBUTYL ALCOHOL |
| CAS No: | 78-83-1 |
| Index No: | 603-108-00-1 |
| EC No: | 201-148-0 |

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

Regulation (EC) No 1272/2008

Flam. Liq. 3; H226
 Skin Irrit. 2; H315
 Eye Dam. 1; H318
 STOT SE 3; H335
 STOT SE 3; H336

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:



Hazard statements

| | |
|------|------------------------------------|
| H226 | Flammable liquid and vapour. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |
| H336 | May cause drowsiness or dizziness. |

Precautionary statements

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

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| | |
|----------------|--|
| P233 | 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. |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P264 | Wash thoroughly after handling. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| 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. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| 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. |
| P312 | Call a POISON CENTER/doctor if you feel unwell. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P310 | Immediately call a POISON CENTER/doctor. |
| P370+P378 | In case of fire: Use Carbon dioxide (CO ₂) / alcohol resistant foam 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 H₁₀ O
Molecular weight: 74,12

Relevant ingredients

| CAS No | Chemical name | | | Quantity |
|---------|---|--------------|----------|----------|
| | EC No | Index No | REACH No | |
| | Classification (Regulation (EC) No 1272/2008) | | | |
| 78-83-1 | NATURAL ISOBUTYL ALCOHOL | | | 100 % |
| | 201-148-0 | 603-108-00-1 | | |
| | Flam. Liq. 3, Skin Irrit. 2, Eye Dam. 1, STOT SE 3, STOT SE 3; H226 H315 H318 H335 H336 | | | |

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity |
|---------|---|--------------------------|----------|
| | Specific Conc. Limits, M-factors and ATE | | |
| 78-83-1 | 201-148-0 | NATURAL ISOBUTYL ALCOHOL | 100 % |
| | inhalation: LC50 = 24,6 mg/l (vapours); dermal: LD50 = 3400 mg/kg; oral: LD50 = >2830 mg/kg | | |

SECTION 4: First aid measures

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4.1. Description of first aid measures

After inhalation

Provide fresh air. Medical treatment necessary.

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. If skin irritation occurs: Get medical advice/attention.

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. Rinse mouth immediately and drink 1 glass of water. Rinse mouth immediately and drink plenty of water.

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

Carbon dioxide (CO₂), Foam, Extinguishing powder.

Unsuitable extinguishing media

Water.

5.2. Special hazards arising from the substance or mixture

Flammable. Vapours can form explosive mixtures with air.

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. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

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

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.

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

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Personal protection equipment: see section 8
 Disposal: see section 13

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

DNEL/DMEL values

| CAS No | Name of agent | | |
|--------------------------|--------------------------|----------|-----------------------|
| DNEL type | Exposure route | Effect | Value |
| 78-83-1 | NATURAL ISOBUTYL ALCOHOL | | |
| Worker DNEL, long-term | inhalation | systemic | 310 mg/m ³ |
| Consumer DNEL, long-term | inhalation | systemic | 55 mg/m ³ |

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

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recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Suitable gloves type NBR (Nitrile rubber) (0,4mm)

Skin protection

Use of protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|------------------------|
| Physical state: | Liquid |
| Colour: | |
| Melting point/freezing point: | -108 °C |
| Boiling point or initial boiling point and boiling range: | 108 °C |
| Flammability: | not determined |
| Lower explosion limits: | 1,4 vol. % |
| Upper explosion limits: | 11 vol. % |
| Flash point: | 27 °C |
| Auto-ignition temperature: | 430 °C |
| Decomposition temperature: | not determined |
| pH-Value: | 7 |
| Viscosity / kinematic: (at 20 °C) | 4 mm ² /s |
| Water solubility: (at 20 °C) | 85 g/L |
| Solubility in other solvents | not determined |
| Partition coefficient n-octanol/water: | 0,76 |
| Vapour pressure: (at 20 °C) | 11,8 hPa |
| Vapour pressure: (at 50 °C) | 73,4 hPa |
| Density (at 20 °C): | 0,80 g/cm ³ |
| Relative vapour density: (at 20 °C) | 2,55 |

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% |
| Viscosity / dynamic: (at 20 °C) | 3,1 mPa·s |

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable.

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10.2. Chemical stability

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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

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

| CAS No | Chemical name | | | | |
|---------|--------------------------|------------------|---------|--------------------|----------|
| | Exposure route | Dose | Species | Source | Method |
| 78-83-1 | NATURAL ISOBUTYL ALCOHOL | | | | |
| | oral | LD50 >2830 mg/kg | Rat | REACH Registration | OECD 401 |
| | dermal | LD50 3400 mg/kg | Rabbit | GESTIS | |
| | inhalation (4 h) vapour | LC50 24,6 mg/l | Rat | REACH REGISTRATION | |

Irritation and corrosivity

Causes skin irritation.
Causes serious eye damage.

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

STOT-single exposure

May cause respiratory irritation. (NATURAL ISOBUTYL ALCOHOL)
May cause drowsiness or dizziness. (NATURAL ISOBUTYL ALCOHOL)

STOT-repeated exposure

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

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties

No information available.

Further information

This substance is classified as hazardous according to Regulation (EC) No 1272 (2008).

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

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| CAS No | Chemical name | | | | | |
|---------|--------------------------|--------------|-----------|---------|---|--------------------------------|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 78-83-1 | NATURAL ISOBUTYL ALCOHOL | | | | | |
| | Acute fish toxicity | LC50 mg/l | 1430 | 96 h | Pimephales promelas (fathead minnow) | REACH Dossier |
| | Acute algae toxicity | ErC50 | 593 mg/l | 72 h | Pseudokirchneriella subcapitata | REACH Dossier OECD 201 |
| | Acute crustacea toxicity | EC50 mg/l | 1100 | 48 h | Daphnia pulex (water flea) | REACH Dossier ASTM E1193-97 |
| | Crustacea toxicity | NOEC | 20 mg/l | 21 d | Daphnia magna (Big water flea) | REACH Dossier |

12.2. Persistence and degradability

The product has not been tested.

| CAS No | Chemical name | | | | |
|---------|---|-------|----|---------------|--|
| | Method | Value | d | Source | |
| | Evaluation | | | | |
| 78-83-1 | NATURAL ISOBUTYL ALCOHOL | | | | |
| | OECD 301 | 74% | 28 | REACH Dossier | |
| | OECD 301 | 14% | 5 | REACH Dossier | |
| | Readily biodegradable (according to OECD criteria). | | | | |

12.3. Bioaccumulative potential

The product has not been tested.

Partition coefficient n-octanol/water

| CAS No | Chemical name | Log Pow |
|---------|--------------------------|---------|
| 78-83-1 | NATURAL ISOBUTYL ALCOHOL | 0,76 |

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

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.

No information available.

12.7. Other adverse effects

No information available.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

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

List of Wastes Code - residues/unused products

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - used product

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160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: UN 1212
14.2. UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
 Hazard label: 3



Classification code: F1
 Limited quantity: 5 L
 Excepted quantity: E1
 Transport category: 3
 Hazard No: 30
 Tunnel restriction code: D/E

Other applicable information (land transport)

E1

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1212
14.2. UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
 Hazard label: 3



Classification code: F1
 Limited quantity: 5 L
 Excepted quantity: E1

Other applicable information (inland waterways transport)

E1

Marine transport (IMDG)

14.1. UN number or ID number: UN 1212
14.2. UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
 Hazard label: 3



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| | |
|---------------------|----------|
| Special Provisions: | - |
| Limited quantity: | 5 L |
| Excepted quantity: | E1 |
| EmS: | F-E, S-D |

Air transport (ICAO-TI/IATA-DGR)

| | |
|--|------------|
| 14.1. UN number or ID number: | UN 1212 |
| 14.2. UN proper shipping name: | ISOBUTANOL |
| 14.3. Transport hazard class(es): | 3 |
| 14.4. Packing group: | III |
| Hazard label: | 3 |



| | |
|--|-------|
| Limited quantity Passenger: | 10 L |
| Passenger LQ: | Y344 |
| Excepted quantity: | E1 |
| IATA-packing instructions - Passenger: | 355 |
| IATA-max. quantity - Passenger: | 60 L |
| IATA-packing instructions - Cargo: | 366 |
| IATA-max. quantity - Cargo: | 220 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

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40

Directive 2010/75/EU on industrial emissions: 100 % (800 g/l)

Directive 2004/42/EC on VOC in paints and varnishes: 100 % (800 g/l)

Information according to Directive 2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,4,5,6,7,8,9,10,11,12,14,15,16.

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Abbreviations and acronyms

Flam. Liq: Flammable liquid

Skin Irrit: Skin irritation

Eye Dam: Eye damage

STOT SE: Specific target organ toxicity - single exposure

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>For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety
assessment, chapter R.20 (Table of terms and abbreviations).**Relevant H and EUH statements (number and full text)**

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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.

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Identified uses

| No | Short title | LCS | SU | PC | PROC | ERC | AC | TF | Specification |
|----|--|-----|----|----|------|-----|----|----|---------------|
| 1 | For Flavour use for food and feed only | - | - | - | - | - | - | - | Flavour |

LCS: Life cycle stages

SU: Sectors of use

PC: Product categories

PROC: Process categories

ERC: Environmental release categories

AC: Article categories

TF: Technical functions