

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**NATURAL DIFURFURYL DISULFIDE**

Revision date: 09/26/2024

Product code: 314600US

Page 1 of 8

**1. Identification****Product identifier**

NATURAL DIFURFURYL DISULFIDE

Substance name: NATURAL DIFURFURYL DISULFIDE  
CAS No: 4437-20-1

**Recommended use of the chemical and restrictions on use****Use of the substance/mixture**

Manufacturing of: - Air care products - Perfumes, fragrances - Pharmaceuticals - Cosmetics, personal care products - Flavouring Substances - Other

**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: Safety Team      Telephone: + 49 2822 68561 0  
E-mail: safety-documentation@axxence.com  
Internet: www.axxence.de  
Responsible Department: Safety Management

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

**2. Hazard(s) identification****Classification of the chemical****29 CFR Part 1910.1200**

Acute toxicity: Acute Tox. 2 (inhalation)  
Acute toxicity: Acute Tox. 4 (oral)

**Label elements****29 CFR Part 1910.1200**

**Signal word:** Danger

**Pictograms:**

**Hazard statements**

Harmful if swallowed  
Fatal if inhaled

**Precautionary statements**

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.  
Wear respiratory protection.  
If swallowed: Call a poison center/doctor if you feel unwell.  
Rinse mouth.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
Immediately call a poison center/doctor.  
Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**NATURAL DIFURFURYL DISULFIDE**

Revision date: 09/26/2024

Product code: 314600US

Page 2 of 8

Dispose of contents/container to Organic waste.

**3. Composition/information on ingredients****Substances**Sum formula: C<sub>10</sub> H<sub>10</sub> O<sub>2</sub> S<sub>2</sub>

Molecular weight: 226,32 g/mol

**Relevant ingredients**

CAS No	Components	Quantity
4437-20-1	NATURAL DIFURFURYL DISULFIDE	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. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

**After contact with skin**

Wash with plenty of water. Immediately remove any contaminated clothing, shoes or stockings. Medical treatment necessary.

**After contact with eyes**

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist.

**After ingestion**

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink 1 glass of water. Induce vomiting when the affected person is not unconscious. Call a physician immediately.

**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**

Co-ordinate fire-fighting measures to the fire surroundings.

**Specific hazards arising from the chemical**

Non-flammable. Vapors may form explosive mixtures with air.

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

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Use water spray jet 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**

## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### NATURAL DIFURFURYL DISULFIDE

Revision date: 09/26/2024

Product code: 314600US

Page 3 of 8

#### General advice

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

#### Environmental precautions

Do not allow to enter into surface water or drains.

#### 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.

#### 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

No special fire protection measures are necessary.

##### 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 exhaustion at critical locations.

##### Hints on joint storage

No special measures are necessary.

## 8. Exposure controls/personal protection

#### Control parameters

#### 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

## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### NATURAL DIFURFURYL DISULFIDE

Revision date: 09/26/2024

Product code: 314600US

Page 4 of 8

#### Eye/face protection

Wear eye protection/face protection.

#### 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. Suitable gloves type Disposable gloves + NBR (Nitrile rubber)

#### Skin protection

Use of protective clothing.

#### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

### 9. Physical and chemical properties

#### Information on basic physical and chemical properties

Physical state:

Color: yellow to amber

Melting point/freezing point: 10 °C

Boiling point or initial boiling point and boiling range: 229 °C

Flammability: not determined

Lower explosion limits: not determined

Upper explosion limits: not determined

Flash point: 100 °C

Auto-ignition temperature: not determined

Decomposition temperature: not determined

pH-Value: not determined

Viscosity / kinematic: not determined

Water solubility: 0,01156 g/l  
(at 25 °C)

Solubility in other solvents  
not determined

Partition coefficient n-octanol/water: 4,03

Vapor pressure: not determined

Density (at 20 °C): 1,23 g/cm<sup>3</sup>

Relative vapour density: 7,7  
(at 20 °C)

Particle characteristics: not applicable

#### 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%

### 10. Stability and reactivity

## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### NATURAL DIFURFURYL DISULFIDE

Revision date: 09/26/2024

Product code: 314600US

Page 5 of 8

#### Reactivity

No hazardous reaction when handled and stored according to provisions.

#### Chemical stability

The product is stable under storage at normal ambient temperatures.

#### Possibility of hazardous reactions

No known hazardous reactions.

#### Conditions to avoid

none

#### Incompatible materials

No information available.

#### Hazardous decomposition products

No known hazardous decomposition products.

## 11. Toxicological information

### Information on toxicological effects

#### **Acute toxicity**

Fatal if inhaled

Harmful if swallowed

CAS No	Components				
	Exposure route	Dose	Species	Source	Method
4437-20-1	NATURAL DIFURFURYL DISULFIDE				
	oral	ATE 500 mg/kg			
	inhalation vapour	LC50 0,19 mg/l	Rat	Symrise (RIFM dissemination portal)	
	inhalation dust/mist	ATE 0,05 mg/l			

#### **Irritation and corrosivity**

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

#### **Sensitizing effects**

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

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

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

Reproductive toxicity: 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**

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

Carcinogenicity (OSHA): Not listed.

Carcinogenicity (IARC): Not listed.

Carcinogenicity (NTP): Not listed.

#### **Aspiration hazard**

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

### Information on other hazards

#### **Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to humans.

## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### NATURAL DIFURFURYL DISULFIDE

Revision date: 09/26/2024

Product code: 314600US

Page 6 of 8

## 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.

### 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**

**UN number or ID number:**

UN 3382

**Proper shipping name:**

TOXIC BY INHALATION LIQUID, N.O.S.

**Transport hazard class(es):**

6.1

**Packing group:**

I

Hazard label:

6.1



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

**UN number or ID number:**

UN 3382

**UN proper shipping name:**

TOXIC BY INHALATION LIQUID, N.O.S.

**Transport hazard class(es):**

6.1

**Packing group:**

I

Hazard label:

6.1



Special Provisions:

274

Limited quantity:

0

Excepted quantity:

E0

## Safety Data Sheet

according to 29 CFR 1910.1200(g)

### NATURAL DIFURFURYL DISULFIDE

Revision date: 09/26/2024

Product code: 314600US

Page 7 of 8

EmS: F-A, S-A

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

<b>UN number or ID number:</b>	UN 3382
<b>UN proper shipping name:</b>	TOXIC BY INHALATION LIQUID, N.O.S.
<b>Transport hazard class(es):</b>	6.1
<b>Packing group:</b>	I
Hazard label:	6.1



Limited quantity Passenger:	Forbidden	
Passenger LQ:	Forbidden	
IATA-packing instructions - Passenger:		Forbidden
IATA-max. quantity - Passenger:		Forbidden
IATA-packing instructions - Cargo:		Forbidden
IATA-max. quantity - Cargo:		Forbidden

**Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**Special precautions for user**

Warning: Acute Toxicity.

**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 DIFURFURYL DISULFIDE (4437-20-1): Immediate (acute) 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: 09/26/2024  
 Revision No: 103  
 This data sheet contains changes from the previous version in section(s): 2,14.

**Safety Data Sheet**

according to 29 CFR 1910.1200(g)

**NATURAL DIFURFURYL DISULFIDE**

Revision date: 09/26/2024

Product code: 314600US

Page 8 of 8

**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>  
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).  
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

**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.