

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

### 1.1 Product identifier

**Occlu Spray Plus Spraydose grün**  
**Article number: 554211**

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

#### 1.2.1 Relevant uses

Occlusion spray

#### 1.2.2 Uses advised against

None known.

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

#### Company

Hager & Werken GmbH & Co. KG  
Ackerstr. 1  
47269 Duisburg / GERMANY  
Phone +49(0)203-99269-0  
Fax +49 (0)203 29 92 83  
Homepage [www.hagerwerken.de](http://www.hagerwerken.de)  
E-mail [info@hagerwerken.de](mailto:info@hagerwerken.de)

#### Address enquiries to

##### Technical information

[info@hagerwerken.de](mailto:info@hagerwerken.de)

##### Safety Data Sheet

[sdb@chemiebuero.de](mailto:sdb@chemiebuero.de)

### 1.4 Emergency telephone number

#### Advisory body

+49 (0) 551-19240 Giftinformationszentrum-Nord

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Aerosol 1: H222 Extremely flammable aerosol. H229 Pressurised container: May burst if heated.  
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects.

### 2.2 Label elements

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

#### Hazard pictograms



#### Signal word

DANGER

#### Hazard statements

H222 Extremely flammable aerosol.  
H229 Pressurised container: May burst if heated.  
H412 Harmful to aquatic life with long lasting effects.

#### Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C / 122°F.  
P273 Avoid release to the environment.  
P501 Dispose of contents/container in accordance with local/national regulation.

### 2.3 Other hazards

#### Environmental hazards

Does not contain any PBT or vPvB substances.  
Contains no ingredients with endocrine-disrupting properties.

#### Other hazards

Further hazards were not determined with the current level of knowledge.

### SECTION 3: Composition / Information on ingredients

#### 3.1 Substances

not applicable

#### 3.2 Mixtures

The product is a mixture.

| Range [%] | Substance   |
|-----------|---|
| 30 - <70  | Butane<br>CAS: 106-97-8<br>GHS/CLP: Flam. Gas 1: H220 - Press. Gas: H280  |
| 25 - <50  | Propane<br>CAS: 74-98-6<br>GHS/CLP: Flam. Gas 1: H220 - Press. Gas: H280  |
| 1 - <5    | iso-Butane<br>CAS: 75-28-5<br>GHS/CLP: Flam. Gas 1: H220 - Press. Gas: H280   |
| 2,5 - <5  | Pentane<br>CAS: 109-66-0<br>GHS/CLP: Flam. Liq. 2: H225 - Asp. Tox. 1: H304 - STOT SE 3: H336 - Aquatic Chronic 2: H411 |

#### Comment on component parts

Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.  
For full text of H-statements: see SECTION 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General information

Change soaked clothing.

##### Inhalation

Ensure supply of fresh air.  
In the event of symptoms seek medical treatment.

##### Skin contact

In case of contact with skin wash off immediately with soap and water.  
Consult a doctor if skin irritation persists.

##### Eye contact

In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

##### Ingestion

Do not induce vomiting.  
In the event of symptoms seek medical treatment.

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

Headache  
Vertigo  
Nausea, vomiting.  
Irritant effects

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

treat symptomatically

### SECTION 5: Fire-fighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Carbon dioxide.  
Dry powder.  
Foam.

##### Extinguishing media that must not be used

Water.

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

risk of formation of toxic pyrolysis products, carbon monoxide (CO), not combusted hydrocarbons  
Bursting aerosols can be forcibly projected from a fire.

### 5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

Cool containers at risk with water spray jet.

## SECTION 6: Accidental release measures

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

Ensure adequate ventilation.

Keep away from all sources of ignition.

Use personal protective equipment (protective gloves, safety glasses, protective clothing).

### 6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

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

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).

Dispose of absorbed material in accordance with the regulations.

### 6.4 Reference to other sections

See SECTION 8+13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Use only in well-ventilated areas.

Avoid spilling or spraying in enclosed areas.

Keep away from all sources of ignition - Refrain from smoking.

Take precautionary measures against static discharges.

Do not eat, drink, smoke or take drugs at work.

Wash hands before breaks and after work.

Use barrier skin cream.

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

Keep only in original container.

Do not store together with oxidizing agents.

Keep in a cool place, heat causes increase in pressure and risk of bursting.

Protect from heat/overheating and from sun.

### 7.3 Specific end use(s)

See product use, SECTION 1.2

**SECTION 8: Exposure controls / personal protection**

**8.1 Control parameters**

**Ingredients with occupational exposure limits to be monitored (GB)**

|  |
|--|
| Substance  |
| Butane   |
| CAS: 106-97-8  |
| Long-term exposure: 600 ppm, 1450 mg/m <sup>3</sup>              |
| Short-term exposure (15-minute): 750 ppm, 1810 mg/m <sup>3</sup> |
| iso-Butane   |
| CAS: 75-28-5   |
| Long-term exposure: 600 ppm, 1450 mg/m <sup>3</sup> , (Butane)   |
| Short-term exposure (15-minute): 750 ppm, 1810 mg/m <sup>3</sup> |
| Pentane  |
| CAS: 109-66-0  |
| Long-term exposure: 600 ppm, 1800 mg/m <sup>3</sup>              |

**DNEL**

|   |
|---|
| Substance   |
| Butane, CAS: 106-97-8   |
| There are no DNEL values established for the substance.                             |
| Propane, CAS: 74-98-6   |
| There are no DNEL values established for the substance.                             |
| iso-Butane, CAS: 75-28-5  |
| There are no DNEL values established for the substance.                             |
| Pentane, CAS: 109-66-0  |
| Industrial, dermal, Long-term - systemic effects, 432 mg/kg bw/day                  |
| Industrial, inhalative, Long-term - systemic effects, 3000 mg/m <sup>3</sup>        |
| general population, oral, Long-term - systemic effects, 214 mg/kg bw/day            |
| general population, inhalative, Long-term - systemic effects, 643 mg/m <sup>3</sup> |
| general population, dermal, Long-term - systemic effects, 214 mg/kg bw/day          |

**PNEC**

|   |
|---|
| Substance   |
| Butane, CAS: 106-97-8                                   |
| There are no PNEC values established for the substance. |
| Propane, CAS: 74-98-6                                   |
| There are no PNEC values established for the substance. |
| iso-Butane, CAS: 75-28-5                                |
| There are no PNEC values established for the substance. |
| Pentane, CAS: 109-66-0                                  |
| soil, 550 µg/kg soil dw                                 |
| sediment (seawater), 1.2 mg/kg sediment dw              |
| sediment (freshwater), 1.2 mg/kg sediment dw            |
| sewage treatment plants (STP), 3.6 mg/L                 |
| seawater, 230 µg/L                                      |
| freshwater, 230 µg/L                                    |

## 8.2 Exposure controls

|  |   |
|--|---|
| <b>Additional advice on system design</b>                          | Ensure adequate ventilation on workstation.<br>Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.  |
| <b>Eye protection</b>  | Safety glasses. (EN 166:2001)   |
| <b>Hand protection</b>   | 0,7 mm Butyl rubber, >480 min (EN 374-1/-2/-3).<br>The details concerned are recommendations. Please contact the glove supplier for further information.  |
| <b>Skin protection</b>   | Solvent-resistant protective clothing (EN 340)  |
| <b>Other</b>   | Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.<br>Avoid contact with eyes and skin.<br>Do not inhale aerosols. |
| <b>Respiratory protection</b>                                      | In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection.<br>Short term: filter apparatus, filter AX (DIN EN 14387).   |
| <b>Thermal hazards</b>   | No information available.   |
| <b>Delimitation and monitoring of the environmental exposition</b> | not determined  |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|  |                           |
|--|---------------------------|
| <b>Physical state</b>                          | aerosol                   |
| <b>Color</b>                                   | green                     |
| <b>Odor</b>                                    | characteristic            |
| <b>Odour threshold</b>                         | not determined            |
| <b>pH-value</b>                                | 7 - 10                    |
| <b>pH-value [1%]</b>                           | not applicable            |
| <b>Boiling point [°C]</b>                      | not applicable            |
| <b>Flash point [°C]</b>                        | not determined            |
| <b>Flammability (solid, gas) [°C]</b>          | not applicable            |
| <b>Lower explosion limit</b>                   | not determined            |
| <b>Upper explosion limit</b>                   | not determined            |
| <b>Oxidising properties</b>                    | no                        |
| <b>Vapour pressure/gas pressure [kPa]</b>      | 270                       |
| <b>Density [g/cm<sup>3</sup>]</b>              | 0,79 - 0,89 (Liquid)      |
| <b>Relative density</b>                        | not determined            |
| <b>Bulk density [kg/m<sup>3</sup>]</b>         | not applicable            |
| <b>Solubility in water</b>                     | partially miscible        |
| <b>Solubility other solvents</b>               | No information available. |
| <b>Partition coefficient [n-octanol/water]</b> | not determined            |
| <b>Kinematic viscosity</b>                     | not determined            |
| <b>Relative vapour density</b>                 | not determined            |
| <b>Evaporation speed</b>                       | not applicable            |
| <b>Melting point [°C]</b>                      | not determined            |
| <b>Auto-ignition temperature</b>               | not determined            |
| <b>Decomposition temperature [°C]</b>          | not applicable            |
| <b>Particle characteristics</b>                | No information available. |

## 9.2 Other information

none

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reactions known if used as directed.

### 10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

### 10.3 Possibility of hazardous reactions

Heat causes increase in pressure and risk of bursting.

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

Strong oxidizing agent.

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute oral toxicity** Based on available data, the classification criteria are not met.

|                                 |
|---------------------------------|
| Substance                       |
| Pentane, CAS: 109-66-0          |
| LD50, oral, Rat, >2000 mg/kg bw |

**Acute dermal toxicity** Based on available data, the classification criteria are not met.

**Acute inhalational toxicity** Based on available data, the classification criteria are not met.

|  |
|--|
| Substance  |
| Butane, CAS: 106-97-8                              |
| LC50, inhalative, Rat, 658 mg/L (IUCLID)           |
| Propane, CAS: 74-98-6                              |
| LC50, inhalative, Rat, > 1443 mg/l (15 min) (Lit.) |
| iso-Butane, CAS: 75-28-5                           |
| LC50, inhalative, mouse, 1237 mg/L                 |
| Pentane, CAS: 109-66-0                             |
| LC50, inhalative, Rat, 25.3 mg/L, 4h               |

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

|                          |
|--------------------------|
| Substance                |
| Butane, CAS: 106-97-8    |
| Eye, non-irritating      |
| Propane, CAS: 74-98-6    |
| Eye, non-irritating      |
| iso-Butane, CAS: 75-28-5 |
| Eye, non-irritating      |

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

|                          |
|--------------------------|
| Substance                |
| Butane, CAS: 106-97-8    |
| dermal, non-irritating   |
| Propane, CAS: 74-98-6    |
| dermal, non-irritating   |
| iso-Butane, CAS: 75-28-5 |
| dermal, non-irritating   |

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

|                             |
|-----------------------------|
| Substance                   |
| Butane, CAS: 106-97-8       |
| inhalative, non-sensitizing |
| dermal, non-sensitizing     |
| Propane, CAS: 74-98-6       |
| inhalative, non-sensitizing |
| dermal, non-sensitizing     |
| iso-Butane, CAS: 75-28-5    |
| inhalative, non-sensitizing |

|                         |
|-------------------------|
| dermal, non-sensitizing |
|-------------------------|

**Specific target organ toxicity — single exposure** — Based on available data, the classification criteria are not met.

|                            |
|----------------------------|
| Substance                  |
| Butane, CAS: 106-97-8      |
| inhalative, non-irritating |
| Propane, CAS: 74-98-6      |
| inhalative, non-irritating |
| iso-Butane, CAS: 75-28-5   |
| inhalative, non-irritating |

**Specific target organ toxicity — repeated exposure** — Based on available data, the classification criteria are not met.

|  |
|--|
| Substance                                      |
| Propane, CAS: 74-98-6                          |
| NOAEC, inhalative, Rat, 4437 mg/m <sup>3</sup> |

**Mutagenicity** Does not contain a relevant substance that meets the classification criteria.

**Reproduction toxicity** Does not contain a relevant substance that meets the classification criteria.

**Carcinogenicity** Does not contain a relevant substance that meets the classification criteria.

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

**General remarks**

Toxicological data of complete product are not available.  
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

## SECTION 12: Ecological information

### 12.1 Toxicity

|  |
|--|
| Substance                              |
| Pentane, CAS: 109-66-0                 |
| EL50, (72h), Algae, 20.33 mg/L         |
| EL50, (48h), Invertebrates, 48.11 mg/L |
| LL50, (96h), fish, 27.55 mg/L          |

### 12.2 Persistence and degradability

**Behaviour in environment compartments** not determined

**Behaviour in sewage plant** not determined

**Biological degradability** not determined

### 12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

### 12.4 Mobility in soil

No information available.



### 12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

### 12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

### 12.7 Other adverse effects

Ecological data of complete product are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste material must be disposed of in accordance with national regulations.

#### Product

Dispose of as hazardous waste.

#### Contaminated packaging

Uncontaminated packaging may be taken for recycling.

## SECTION 14: Transport information

### 14.1 UN number or ID number


Transport by land according to ADR/RID 1950


Inland navigation (ADN) 1950


Marine transport in accordance with IMDG 1950


Air transport in accordance with IATA 1950

**14.2 UN proper shipping name**

|   |   |
|---|---|
| <b>Transport by land according to ADR/RID</b> | Aerosols  |
| - Classification Code                         | 5F  |
| - Label                                       |  |
| - ADR LQ                                      | 1 l   |
| - ADR 1.1.3.6 (8.6)                           | Transport category (tunnel restriction code) 2 (D)                                |

|                                |   |
|--------------------------------|---|
| <b>Inland navigation (ADN)</b> | Aerosols  |
| - Classification Code          | 5F  |
| - Label                        |  |

|   |  |
|---|--|
| <b>Marine transport in accordance with IMDG</b> | Aerosols   |
| - EMS   | F-D, S-U   |
| - Label   |  |
| - IMDG LQ                                       | 1 l  |

|  |   |
|--|---|
| <b>Air transport in accordance with IATA</b> | Aerosols, flammable   |
| - Label                                      |  |

**14.3 Transport hazard class(es)**

|   |     |
|---|-----|
| <b>Transport by land according to ADR/RID</b>   | 2   |
| <b>Inland navigation (ADN)</b>                  | 2   |
| <b>Marine transport in accordance with IMDG</b> | 2.1 |
| <b>Air transport in accordance with IATA</b>    | 2.1 |

**14.4 Packing group**

|   |                |
|---|----------------|
| <b>Transport by land according to ADR/RID</b>   | not applicable |
| <b>Inland navigation (ADN)</b>                  | not applicable |
| <b>Marine transport in accordance with IMDG</b> | not applicable |
| <b>Air transport in accordance with IATA</b>    | not applicable |

#### 14.5 Environmental hazards

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

#### 14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

#### 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

**TRANSPORT-REGULATIONS** ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2021)

**NATIONAL REGULATIONS (GB):** EH40/2005 Workplace exposure limits (Second edition, published December 2011).

- **Observe employment restrictions for people** Observe employment restrictions for young people.

- **VOC (2010/75/CE)** 99 %

#### 15.2 Chemical safety assessment

No information available.

## SECTION 16: Other information

### 16.1 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses  
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure  
 ATE = acute toxicity estimate  
 CAS = Chemical Abstracts Service  
 CLP = Classification, Labelling and Packaging  
 DMEL = Derived Minimum Effect Level  
 DNEL = Derived No Effect Level  
 EC50 = Median effective concentration  
 ECB = European Chemicals Bureau  
 EEC = European Economic Community  
 EINECS = European Inventory of Existing Commercial Chemical Substances  
 EL50 = Median effective loading  
 ELINCS = European List of Notified Chemical Substances  
 EmS = Emergency Schedules  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IC50 = Inhibition concentration, 50%  
 IMDG = International Maritime Code for Dangerous Goods  
 IUCLID = International Uniform Chemical Information Database  
 IVIS = In vitro irritation score  
 LC50 = Lethal concentration, 50%  
 LD50 = Median lethal dose  
 LC0 = lethal concentration, 0%  
 LOAEL = lowest-observed-adverse-effect level  
 LL50 = Median lethal loading  
 LQ = Limited Quantities  
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships  
 NOAEL = No Observed Adverse Effect Level  
 NOEC = No Observed Effect Concentration  
 PBT = Persistent, Bioaccumulative and Toxic substance  
 PNEC = Predicted No-Effect Concentration  
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
 STP = Sewage Treatment Plant  
 TLV@/TWA = Threshold limit value – time-weighted average  
 TLV@STEL = Threshold limit value – short-time exposure limit  
 VOC = Volatile Organic Compounds  
 vPvB = very Persistent and very Bioaccumulative

### 16.2 Other information

#### Classification procedure

Aerosol 1: H222 Extremely flammable aerosol. (Bridging principle "Aerosols") H229  
 Pressurised container: May burst if heated. (Bridging principle "Aerosols")  
 Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects. ()

#### Modified position

none

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