OCCLUSIONSSPRAY

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

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

1.1. Product identifier

Product form	:	Mixture
Trade name	:	Occlusionsspray
SDS Number	:	5380
Product use	:	Professional use

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

1.2.1. Relevant identified uses

Function or use category	:	Coating

1.2.2. Uses advised against

Restrictions on use	:	intraoral application

1.3. Details of the supplier of the safety data sheet

Supplier
Lukadent GmbH
Felsenbergweg 2
71701 Schwieberdingen
Deutschland
Tel.: + 49 (0)7150/ 32955
Fax: + 49 (0) 7150/ 34113
Internet: www.lukadent.de
E-Mail: info@lukadent.de

1.4. Emergency telephone number

+ 49 (0)7150/ 32955 (Mo. - Fr. 08:30 - 16:30)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards	Aerosol, Category 1	H222;H229	Extremely flammable aerosol. Pressurised container: May burst if heated.
Health hazards	Specific target organ toxicity — Single exposure, Category 3, Narcosis	H336	May cause drowsiness or dizziness.
Environmental hazards	Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412	Harmful to aquatic life with long lasting effects.

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

Adverse physicochemical, human health and environmental effects

Pressurised container: May burst if heated. Extremely flammable aerosol.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008

Hazard pictograms

Signal word Danger

Contains	pentane

Hazard statements

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H336	May cause drowsiness or dizziness.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

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.

Storage

P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS- No EC- No Index No RRN	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Notes
butane	106-97-8 203-448-7 601-004-00-0 01-2119474691-32-XXXX	< 90	Flam. Gas 1A, H220 Press. Gas (Comp.), H280	(Note C)(Note U)
Propane	74-98-6 200-827-9 601-003-00-5 01-2119486944-21-XXXX	< 90	Flam. Gas 1A, H220 Press. Gas (Comp.), H280	(Note U)
isobutane	75-28-5 200-857-2 601-004-00-0 01-2119485395-27-XXXX	< 90	Flam. Gas 1A, H220 Press. Gas (Comp.), H280	(Note C)(Note U)
pentane	109-66-0 203-692-4 601-006-00-1 01-2119459286-30-XXXX	10 - < 20	Flam. Liq. 1, H224 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	# (Note C)

Comments : #: substance with a Community workplace exposure limit
Note: Regulation No. 1272/2008 - Annex VI

Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.
Note U(table 3.1) : When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case.
Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

First-aid measures after skin contact : Wash skin with plenty of water. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Get medical advice/attention.

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

Symptoms/effects: : May cause drowsiness or dizziness.

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

Provide general supportive measures and treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry chemical, CO2, dry sand, or alcohol-resistant foam.

Unsuitable extinguishing media : Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Extremely flammable aerosol.

Explosion hazard : Pressurised container: May burst if heated.

Reactivity in case of fire : In the event of fire hazardous gases may occur.

5.3. Advice for firefighters

Firefighting instructions : Move container from fire area if it can be done without risk. Use water spray or fog for cooling exposed containers.

Protection during firefighting : Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Wear fire/flame resistant/retardant clothing.

Other information : Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not handle until all safety precautions have been read and understood. Eliminate every possible source of ignition.

6.1.1. For non-emergency personnel

Emergency procedures : Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

6.1.2. For emergency responders

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the MSDS.

6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Remove all sources of ignition. Keep away from combustible material. Stop the leak.

Other information : Prevent entry into waterways, sewer, basements or confined areas.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from sources of ignition - No smoking. Do not pierce or burn, even after use. Use only outdoors or in a well-ventilated area. Ground/bond container and receiving equipment. Avoid prolonged exposure. Avoid contact with eyes. Observe good industrial hygiene practices. Do not eat, drink or smoke when using this product. Wear appropriate personal protective equipment. Keep only in original container. Avoid release to the environment.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store in a well-ventilated place. Keep container tightly closed. Keep away from ignition sources.

Storage class (LGK, TRGS 510) : LGK 2B - Aerosol dispensers and lighters

7.3. Specific end use(s)

Coating.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

pentane (109-66-0)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Pentan
AGW (OEL TWA) [1]	3000 mg/m³
AGW (OEL TWA) [2]	1000 ppm
AGW (OEL C)	6000 mg/m³
AGW (OEL C) [ppm]	2000 ppm
Remark	DFG;EU;Y
Regulatory reference	TRGS900

butane (106-97-8)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Butan
AGW (OEL TWA) [1]	2400 mg/m³
AGW (OEL TWA) [2]	1000 ppm
AGW (OEL C)	9600 mg/m³
AGW (OEL C) [ppm]	4000 ppm
Remark	DFG
Regulatory reference	TRGS900

Propane (74-98-6)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	Propan
AGW (OEL TWA) [1]	1800 mg/m³
AGW (OEL TWA) [2]	1000 ppm
Peak exposure limitation factor	4(II)
Remark	DFG

Regulatory reference	TRGS900

Germany - Occupational Exposure Limits (Generic OEL data)

DFG-MAK Liste (empfohlene Arbeitsplatzgrenswerte) Propan (CAS 74-98-6)	1800 mg/m3 (8-Stunden); 7200 mg/m3 (15-Minuten)

isobutane (75-28-5)

Germany - Occupational Exposure Limits (TRGS 900)

Local name	Isobutan
AGW (OEL TWA) [1]	2400 mg/m³
AGW (OEL TWA) [2]	1000 ppm
AGW (OEL C)	9600 mg/m³
AGW (OEL C) [ppm]	4000 ppm
Peak exposure limitation factor	4(II)
Remark	DFG
Regulatory reference	TRGS900

Germany - Occupational Exposure Limits (Generic OEL data)

DFG-MAK Liste (empfohlene Arbeitsplatzgrenswerte) iso-Butan (CAS 75-28-5)	2400 mg/m3 (8-Stunden); 9600 mg/m3 (15-Minuten)

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

pentane (109-66-0)

DNEL/DMEL (Workers)

Long-term - systemic effects, dermal	432 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	3000 mg/m³

DNEL/DMEL (General population)

Long-term - systemic effects,oral	214 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	643 mg/m³
Long-term - systemic effects, dermal	214 mg/kg bodyweight/day

PNEC (Water)

PNEC aqua (freshwater)	230 µg/L
PNEC aqua (marine water)	230 µg/L
PNEC aqua (intermittent, freshwater)	880 µg/L

PNEC (Sediment)

PNEC sediment (freshwater)	1.2 mg/kg dwt
PNEC sediment (marine water)	1.2 mg/kg dwt

PNEC (Soil)

PNEC soil	0.55 mg/kg dwt

PNEC (STP)

PNEC sewage treatment plant	3600 µg/L

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

8.2.2. Personal protection equipment

Personal protective equipment:
Wear recommended personal protective equipment.

8.2.2.1. Eye and face protection

Eye protection:
If skin or eye contact with the product is probable, protective glasses with side shield are recommended

8.2.2.2. Skin protection

Skin and body protection:
Wear suitable protective clothing

Hand protection:
Wear appropriate protective gloves for prolonged or repeated skin contact

Other skin protection

Materials for protective clothing:
Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment

8.2.2.3. Respiratory protection

Respiratory protection:
In case of inadequate ventilation wear respiratory protection.

8.2.2.4. Thermal hazards

Thermal hazard protection:
Wear appropriate thermal protective clothing, when necessary.

8.2.3. Environmental exposure controls

Environmental exposure controls:
Inform appropriate managerial or supervisory personnel of all environmental releases.

Other information:
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Appearance	:	aerosol.
Colour	:	Green. Blue. Red. white.
Odour	:	Characteristic.
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	-44 °C
Flash point	:	aerosol|Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Extremely flammable aerosol
Vapour pressure	:	2700 hPa (@ 20 °C)
Relative vapour density at 20 °C	:	No data available
Relative density	:	No data available
Density	:	1.28 g/m³

Solubility	:	Water: Negligible
Log Pow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	May form explosive/flammable vapor/air mixtures during use.
Oxidising properties	:	No data available
Lower explosive limit (LEL)	:	1.5 vol %
Upper explosive limit (UEL)	:	10.9 vol %

9.2. Other information

VOC (EU)	:	Not applicable.
Ignition temperature	:	365 °C (689 °F)

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol. Pressurised container: May burst if heated.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Hydrocarbon fragments.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Based on available data, the classification criteria are not met
Acute toxicity (dermal)	:	Based on available data, the classification criteria are not met
Acute toxicity (inhalation)	:	Based on available data, the classification criteria are not met
Skin corrosion/irritation	:	Based on available data, the classification criteria are not met
Serious eye damage/irritation	:	Based on available data, the classification criteria are not met
Respiratory or skin sensitisation	:	Based on available data, the classification criteria are not met
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
STOT-single exposure	:	May cause drowsiness or dizziness.

pentane (109-66-0)	
STOT-single exposure	May cause drowsiness or dizziness.

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
Potential adverse human health effects and symptoms	:	Occupational exposure to the substance or mixture may cause adverse effects

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	Harmful to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	:	Not classified

Hazardous to the aquatic environment, long-term (chronic)	:	Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

pentane (109-66-0)

Persistence and degradability	Readily biodegradable. (OECD 301F method).
Biodegradation	87 %

butane (106-97-8)

Persistence and degradability	Readily biodegradable.

Propane (74-98-6)

Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

pentane (109-66-0)

Bioconcentration factor (BCF REACH)	171
Log Pow	3.39
Log Kow	3.45 @ 25 °C

butane (106-97-8)

Log Pow	1.09 – 2.8 @ 20 °C, pH 7

Propane (74-98-6)

Log Pow	1.09 – 2.8 @ 20 °C, pH 7

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Occlusionsspray

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

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

12.6. Other adverse effects

Other adverse effects : No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Waste treatment methods : Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Additional information : Dispose in accordance with all applicable regulations.

European List of Waste (LoW) code : 08 02 01 - waste coating powders
15 01 04 - metallic packaging

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number

UN-No. (ADR)	:	UN 1950
UN-No. (IMDG)	:	UN 1950
UN-No. (IATA)	:	UN 1950
UN-No. (ADN)	:	UN 1950
UN-No. (RID)	:	UN 1950

14.2. UN proper shipping name

Proper Shipping Name (ADR)	:	AEROSOLS
Proper Shipping Name (IMDG)	:	AEROSOLS
Proper Shipping Name (IATA)	:	Aerosols, flammable
Proper Shipping Name (ADN)	:	AEROSOLS
Proper Shipping Name (RID)	:	AEROSOLS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	:	2.1
Danger labels (ADR)	:	2.1

IMDG

Transport hazard class(es) (IMDG)	:	2.1
Danger labels (IMDG)	:	2.1

IATA

Transport hazard class(es) (IATA)	:	2.1
Hazard labels (IATA)	:	2.1

ADN

Transport hazard class(es) (ADN)	:	2.1
Danger labels (ADN)	:	2.1

RID

Transport hazard class(es) (RID)	:	2.1
Danger labels (RID)	:	2.1

14.4. Packing group

Packing group (ADR)	:	Not applicable
Packing group (IMDG)	:	Not applicable
Packing group (IATA)	:	Not applicable
Packing group (ADN)	:	Not applicable
Packing group (RID)	:	Not applicable

14.5. Environmental hazards

Dangerous for the environment	:	No
Marine pollutant	:	No
Other information	:	No supplementary information available.

14.6. Special precautions for user

Overland transport

Classification code (ADR)	:	5F
Special provisions (ADR)	:	190, 327, 344, 625
Limited quantities (ADR)	:	1l
Packing instructions (ADR)	:	P207
Tunnel restriction code (ADR)	:	D

Transport by sea

Special provisions (IMDG)	:	63, 190, 277, 327, 344, 381, 959
Packing instructions (IMDG)	:	P207, LP200
EmS-No. (Fire)	:	F-D
EmS-No. (Spillage)	:	S-U

Stowage category (IMDG) : None

Air transport

PCA Excepted quantities (IATA) : E0
PCA Limited quantities (IATA) : Y203
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 203
PCA max net quantity (IATA) : 75kg
CAO packing instructions (IATA) : 203
CAO max net quantity (IATA) : 150kg
Special provisions (IATA) : A145, A167, A802
ERG code (IATA) : 10L

Inland waterway transport

Classification code (ADN) : 5F
Special provisions (ADN) : 190, 327, 344, 625
Limited quantities (ADN) : 1 L

Rail transport

Special provisions (RID) : 190, 327, 344, 625
Limited quantities (RID) : 1L
Packing instructions (RID) : P207, LP200
Hazard identification number (RID) : 23

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

EU restriction list (REACH Annex XVII)

Reference code	Applicable on
3(a)	pentane
3(b)	pentane
3(c)	pentane
40.	pentane ; butane ; Propane ; isobutane

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : Not applicable.

Directive 2012/18/EU (SEVESO III)

Seveso Additional information : P3a

15.1.2. National regulations

Germany

Water hazard class (WGK) : WGK 2, Significantly hazardous to water (Classification according to AwSV, Annex 1)
Hazardous Incident Ordinance (12. BImSchV) : Listed in the 12. BImSchV (Annex I) under: 1.2.3.1
- Quantity threshold for operational area under § 1 para. 1
  - Sentence 1 :150000 kg
  - Sentence 2 :500000 kg

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Indication of changes:

Section 1 - Section 16.

Full text of H- and EUH-statements

Aerosol 1	Aerosol, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Gas 1A	Flammable gases, Category 1A
Flam. Liq. 1	Flammable liquids, Category 1
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H224	Extremely flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Press. Gas (Comp.)	Gases under pressure : Compressed gas
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Aerosol 1	H222;H229	Expert judgment
STOT SE 3	H336	Expert judgment
Aquatic Chronic 3	H412	Calculation method

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.