

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH)

Revision date: 13 Jan 2021

Print date: 14 Jan 2021

Version: 1



PLURASOL OKKLU PREMIUM

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

1.1. Product identifier

Trade name/designation:

PLURASOL OKKLU PREMIUM

Article No.:

248549, 248550

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

Use of the substance/mixture:

Micropulverized indication spray used to make contact points and surface visible in dental area.

1.3. Details of the supplier of the safety data sheet

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Pluradent GmbH & Co.KG

Kaiserleistraße 3

63067 Offenbach

Germany

Telephone: +49 69 82983-0

Telefax: +49 69 82983-271

E-mail: regulatory.affairs@pluradent.de

Website: www.pluradent.de

1.4. Emergency telephone number

Poisoning Information Centre of Health Austria, 24h: +43 1 406 43 43

poison emergency call Mainz, 24h: +49 6131/19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols (Aerosol 1)	H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated.	On basis of test data.
STOT-single exposure (STOT SE 3)	H336: May cause drowsiness or dizziness.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 3)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

Additional information:

Restricted to professional users.

2.2. Label elements

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

Hazard pictograms:

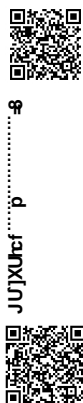


GHS02
Flame



GHS07
Exclamation mark

Signal word: *Danger*



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Hazard components for labelling:

pentane

Hazard statements for physical hazards

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.

hazard statements for health hazards

H336	May cause drowsiness or dizziness.
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Hazard statements for environmental hazards

H412	Harmful to aquatic life with long lasting effects.
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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.

Precautionary statements Storage

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

Other adverse effects:

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

SECTION 3: Composition / information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 106-97-8 EC No.: 203-448-7	butane Flam. Gas 1, Press. Gas Danger H220	50 – < 100 weight-%
CAS No.: 74-98-6 EC No.: 200-827-9 Index No.: 601-003-00-5	propane Flam. Gas 1, Press. Gas Danger H220	10 – < 25 weight-%
CAS No.: 75-28-5 EC No.: 200-857-2 Index No.: 601-004-00-0	isobutane Flam. Gas 1, Press. Gas Danger H220	1 – < 10 weight-%
CAS No.: 109-66-0 EC No.: 203-692-4	pentane Aquatic Chronic 2, Asp. Tox. 1, Flam. Liq. 2, STOT SE 3 Danger H225-H304-H336-H411-EUH066	1 – < 10 weight-%

Full text of H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove victim out of the danger area. If unconscious but breathing normally, place in recovery position and seek medical advice. Do not leave affected person unattended.

Following inhalation:

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of respiratory tract irritation, consult a physician.



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In case of skin contact:

After contact with skin, wash immediately with plenty of water and soap. If skin irritation or rash occurs: Get medical advice/attention.

After eye contact:

Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.

Following ingestion:

Get medical advice/attention.

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

Dizziness Dizziness

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, alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO₂), Dry extinguishing powder, Sand

Unsuitable extinguishing media:

Full water jet

5.2. Special hazards arising from the substance or mixture

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

Hazardous combustion products:

In case of fire: Gases/vapours, harmful

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Wear fire resistant or flame retardant clothing.

Cool endangered containers with water spray. Move undamaged containers from immediate hazard area if it can be done safely.

5.4. Additional information

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

6.1.1. For non-emergency personnel

Personal precautions:

Do not handle until all safety precautions have been read and understood.

Keep unprotected people away. Avoid breathing spray. Provide adequate ventilation.

Use personal protection equipment.

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

Protective equipment:

Use personal protective equipment as required.

Emergency procedures:

If larger quantities of spilled material cannot be contained, local authorities should be notified.

6.1.2. For emergency responders

Personal protection equipment:

Personal protection equipment: see section 8



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6.2. Environmental precautions

*Do not allow to enter into surface water or drains. Avoid release to the environment.
Inform responsible executive director or division manager of all releases to the environment.
Prevent further leakage or spillage if this can be done without danger.*

6.3. Methods and material for containment and cleaning up

No data available

6.4. Reference to other sections

*Safe handling: see section 7
Personal protection equipment: see section 8
Disposal: see section 13*

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Keep away from sources of ignition - No smoking. Pressurized container: Do not pierce or burn, even after use. Use only outdoors or in a well-ventilated area. Ground and bond container and receiving equipment. The general hygiene measures for handling chemicals must be applied. Use personal protection equipment.

Keep only in original packaging.

Environmental precautions:

Avoid release to the environment.

Advices on general occupational hygiene

When using do not eat, drink or smoke.

Avoid contact with eyes and skin.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Keep container tightly closed in a cool, well-ventilated place. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Hints on storage assembly:

Keep away from sources of ignition - No smoking.

Storage class: 2B – Aerosol dispensers and lighters

7.3. Specific end use(s)

Recommendation:

Plating agent



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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
MAK (AT)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 800 ppm (1,900 mg/m ³)
TRGS 900 (DE)	butane CAS No.: 106-97-8 EC No.: 203-448-7	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³)
MAK (AT)	butane CAS No.: 106-97-8 EC No.: 203-448-7	② 1,600 ppm (3,800 mg/m ³) ⑤ (max. 3x60 min./Schicht)
TRGS 900 (DE)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³) ② 4,000 ppm (7,200 mg/m ³)
MAK (AT)	propane CAS No.: 74-98-6 EC No.: 200-827-9	② 2,000 ppm (3,600 mg/m ³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
MAK (AT)	propane CAS No.: 74-98-6 EC No.: 200-827-9	① 1,000 ppm (1,800 mg/m ³)
MAK (AT)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 800 ppm (1,900 mg/m ³)
TRGS 900 (DE)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	① 1,000 ppm (2,400 mg/m ³) ② 4,000 ppm (9,600 mg/m ³)
MAK (AT)	isobutane CAS No.: 75-28-5 EC No.: 200-857-2	② 1,600 ppm (3,800 mg/m ³) ⑤ (max. 3x60 min./Schicht)
TRGS 900 (DE)	pentane CAS No.: 109-66-0 EC No.: 203-692-4	① 1,000 ppm (3,000 mg/m ³) ② 2,000 ppm (6,000 mg/m ³)
MAK (AT)	pentane CAS No.: 109-66-0 EC No.: 203-692-4	② 1,200 ppm (3,600 mg/m ³) ⑤ (max. 3x60 min./Schicht, Momentanwert)
IOELV (EU)	pentane CAS No.: 109-66-0 EC No.: 203-692-4	① 1,000 ppm (3,000 mg/m ³)
MAK (AT)	pentane CAS No.: 109-66-0 EC No.: 203-692-4	① 600 ppm (1,800 mg/m ³)
TRGS 900 (DE)	Hydrocarbons, TRGS 900	① 0 mg/m ³ ⑤ Mass fraction (wt %): 0

8.1.2. Biological limit values

No data available



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8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
pentane CAS No.: 109-66-0 EC No.: 203-692-4	643 mg/m ³	① DNEL worker ② Long-term – inhalation, systemic effects
pentane CAS No.: 109-66-0 EC No.: 203-692-4	214 mg/kg bw/ day	① DNEL worker ② Long-term - dermal, systemic effects
pentane CAS No.: 109-66-0 EC No.: 203-692-4	214 mg/kg bw/ day	① DNEL worker ② Long-term - oral, systemic effects

Substance name	PNEC Value	① PNEC type
pentane CAS No.: 109-66-0 EC No.: 203-692-4	230 µg/l	① PNEC aquatic, freshwater
pentane CAS No.: 109-66-0 EC No.: 203-692-4	230 µg/l	① PNEC aquatic, marine water
pentane CAS No.: 109-66-0 EC No.: 203-692-4	1.2 mg/kg	① PNEC sediment, freshwater
pentane CAS No.: 109-66-0 EC No.: 203-692-4	1.2 mg/kg	① PNEC sediment, marine water
pentane CAS No.: 109-66-0 EC No.: 203-692-4	0.55 mg/kg	① PNEC soil

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Provide adequate ventilation as well as local exhaust at critical locations.

Ensure sufficient ventilation, especially in closed rooms.

8.2.2. Personal protection equipment

Eyeface protection:

Eye glasses with side protection (DIN EN 166)

Skin protection:

Tested protective gloves must be worn EN ISO 374

Respiratory protection:

In case of inadequate ventilation wear respiratory protection.

Thermal hazards:

Use personal protective equipment as required.

Other protection measures:

Wash hands before breaks and after work.

When using do not eat, drink, smoke, sniff.

Wash contaminated clothing before reuse.

8.2.3. Environmental exposure controls

Avoid release to the environment.

Inform responsible executive director or division manager of all releases to the environment.



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Aerosol (Liquid)

Colour: various

Odour: characteristic

Safety relevant basis data

parameter		at °C	Method	Remark
pH	not applicable			Aerosol
Melting point	not determined			
Freezing point	not determined			
Initial boiling point and boiling range	-44 °C			
Decomposition temperature	not determined			
Flash point	not applicable			Aerosol
Evaporation rate	not determined			
Auto-ignition temperature	not determined			
Upper/lower flammability or explosive limits	1.5 – 10.9 Vol-%			In use may form flammable/explosive vapour-air mixture.
Vapour pressure	2,700 hPa	20 °C		
Vapour density	not determined			
Density	1,280 mg/m ³			
Bulk density	not determined			
Water solubility	poorly soluble			
Partition coefficient: n-octanol/water	not determined			
Dynamic viscosity	not determined			
Kinematic viscosity	not determined			
Ignition temperature	365 °C			

9.2. Other information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

10.5. Incompatible materials

Oxidising agent, strong

10.6. Hazardous decomposition products

Carbon monoxide, Carbon dioxide (CO₂), Hydrocarbon fragments

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

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



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Acute dermal toxicity:

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

Acute inhalation toxicity:

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.

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.

Additional information:

Exposure to the substance or mixture may cause adverse health effects.

SECTION 12: Ecological information

12.1. Toxicity

Substance name	Toxicological information
butane CAS No.: 106-97-8 EC No.: 203-448-7	LC ₅₀ : 27.98 mg/l 4 d (fish) EC ₅₀ : 7.71 mg/l 4 d (Algae/water plant)
pentane CAS No.: 109-66-0 EC No.: 203-692-4	EC ₅₀ : <10 mg/l 2 d (Daphnia magna (Big water flea))

Aquatic toxicity:

Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

Substance name	Log K _{OW}	Bioconcentration factor (BCF)
butane CAS No.: 106-97-8 EC No.: 203-448-7	1.09	
isobutane CAS No.: 75-28-5 EC No.: 200-857-2	1.09	
pentane CAS No.: 109-66-0	3.39	171



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Substance name	Log Kow	Bioconcentration factor (BCF)
EC No.: 203-692-4		

12.4. Mobility in soil

No further relevant information available.

12.5. Results of PBT and vPvB assessment

Substance name	Results of PBT and vPvB assessment
isobutane CAS No.: 75-28-5 EC No.: 200-857-2	—
pentane CAS No.: 109-66-0 EC No.: 203-692-4	—

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Dispose of waste according to applicable legislation.

Empty containers contain product residues and can be dangerous.

13.1.1. Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product:

08 02 01 waste coating powders

Waste code packaging:

15 01 04 metallic packaging

Waste treatment options

Appropriate disposal / Product:

Collect in closed and suitable containers for disposal.

Do not allow to enter into surface water or drains.

Dispose of waste according to applicable legislation.

Appropriate disposal / Package:

Empty containers contain product residues and can be dangerous. Non-cleanable packaging must be disposed of in the same way as the substance.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN-No.			
UN 1950	UN 1950	UN 1950	UN 1950
14.2. UN proper shipping name			
AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS



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Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.3. Transport hazard class(es)			
 2.1	 2.1		 2.1
14.4. Packing group			
No data available			
14.5. Environmental hazards			
No	No	No	No
14.6. Special precautions for user			
Special provisions: 190 327 344 625 Limited quantity (LQ): 1 L Excepted Quantities (EQ): E0 Classification code: 5F tunnel restriction code: (D) Remark:	Special provisions: 190 327 344 625 Limited quantity (LQ): 1 L Excepted Quantities (EQ): E0 Classification code: 5F Remark:	Special provisions: 63 190 277 327 344 381 959 Limited quantity (LQ): Siehe SV277 Excepted Quantities (EQ): E0 EmS-No.: F-D, S-U Remark:	Special provisions: A145 A167 Limited quantity (LQ): Y203 Excepted Quantities (EQ): E0 Remark:

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 legislation

Other regulations (EU):

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances [Seveso-III-Directive], Hazard categories:

- P3a 'Flammable' aerosols Category 1 or 2, containing flammable gases Category 1 or 2 or flammable liquids

15.1.2. National regulations

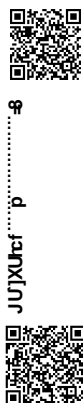
[DE] National regulations

Störfallverordnung

for substances contained in the product:

Hazard categories:

- P3a 'Flammable' aerosols Category 1 or 2, containing flammable gases Category 1 or 2 or flammable liquids



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Remark:

Quantity threshold (in tonnes) for use in lower tier establishments: 10.000 kg

Quantity threshold (in tonnes) for use in upper tier establishments: 50.000 kg

Water hazard class

WGK:

2 - deutlich wassergefährdend

15.2. Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road

IATA - International Air Transport Association

ICAO - International Civil Aviation Organization

IMDG - International Maritime Dangerous Goods

EINECS - European Inventory of Existing Commercial Chemical Substances

ELINCS - European List of Notified Chemical Substances

GHS - Globally Harmonized System of Classification and Labelling of Chemicals

LC50 - Lethal concentration, 50 %

LD50 - Lethal Dose, 50 %

PBT - Persistent, bioaccumulative, toxic

vPvB - very persistent, very bioaccumulative

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Aerosols (Aerosol 1)	H222; H229: Extremely flammable aerosol.; Pressurised container: May burst if heated.	On basis of test data.
STOT-single exposure (STOT SE 3)	H336: May cause drowsiness or dizziness.	Calculation method.
Hazardous to the aquatic environment (Aquatic Chronic 3)	H412: Harmful to aquatic life with long lasting effects.	Calculation method.

16.5. Relevant R-, H- and EUH-phrases (Number and full text)

Hazard statements	
H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Supplemental hazard information	
EUH066	Repeated exposure may cause skin dryness or cracking.

16.6. Training advice

No data available



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16.7. Additional information

The information contained in this safety data sheet is based to the best of our knowledge and belief on currently available information regarding the correct handling of the product under normal conditions. Any other use of this product in conjunction with other processes/procedures not covered by this data sheet is the sole responsibility of the user. This document does not constitute an explicit or implicit guarantee regarding product quality or suitability for a specific purpose.



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