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

1.1. Product identifier

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

Use of the substance/mixture

See technical information

1.3. Details of the supplier of the safety data sheet

Company name:	BIZOL Germany GmbH	
Street:	Martin-Buber-Str. 12	
Place:	D-14163 Berlin	
Telephone:	+49 (30) 804 869-0	Telefax: +49 (30) 804 869-2860
e-mail:	support@bizol.de	
Internet:	www.bizol.com	

1.4. Emergency telephone number:

Germany: +49 (30) 804 869-0 (08.00-17.00, Mo-Fr)
In England and Wales: NHS Direct: 0845 4647 or 111 In Scotland: NHS 24 -
08454 24 24 24 In Republic of Ireland: 01 809 2166

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GB CLP Regulation

Hazard categories:

Aerosols: Aerosol 1

Specific target organ toxicity - single exposure: STOT SE 3

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Extremely flammable aerosol.

Pressurised container: May burst if heated.

May cause drowsiness or dizziness.

Harmful to aquatic life with long lasting effects.

2.2. Label elements

GB CLP Regulation

Hazard components for labelling

diethyl ether

pentane

Signal word:

Danger

Pictograms:



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

P102	Keep out of reach of children.
P260	Do not breathe aerosol.
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.

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P501 Dispose of waste according to applicable legislation.

Special labelling of certain mixtures

EUH019 May form explosive peroxides.

EUH066 Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation). Narcotic effects.

Results of PBT and vPvB assessment: not applicable.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Blend of the following materials with non-hazardous additives.

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (GB CLP Regulation)			
60-29-7	diethyl ether			25 - < 50 %
	200-467-2	603-022-00-4	01-2119535785-29	
	Flam. Liq. 1, Acute Tox. 4, STOT SE 3; H224 H302 H336 EUH019 EUH066			
74-98-6	propane			12,5 - < 20 %
	200-827-9	601-003-00-5	01-2119486944-21	
	Flam. Gas 1, Compressed gas; H220 H280			
109-66-0	pentane			12,5 - < 20 %
	203-692-4	601-006-00-1	01-2119459286-30	
	Flam. Liq. 1, STOT SE 3, Asp. Tox. 1, Aquatic Chronic 2; H224 H336 H304 H411 EUH066			
106-97-8	butane			10 - < 12,5 %
	203-448-7	601-004-00-0	01-2119474691-32	
	Flam. Gas 1, Compressed gas; H220 H280			
75-28-5	isobutane			10 - < 12,5 %
	200-857-2	601-004-00-0	01-2119485395-27	
	Flam. Gas 1, Compressed gas; H220 H280			

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	
60-29-7	200-467-2	diethyl ether	25 - < 50 %
		dermal: LD50 = >20000 mg/kg; oral: LD50 = 855 mg/kg	
109-66-0	203-692-4	pentane	12,5 - < 20 %
		inhalation: LC50 = 364 mg/l (vapours)	

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. If unconscious but breathing normally, place in recovery position and seek medical advice. Remove contaminated, saturated clothing immediately.

After inhalation

Remove casualty to fresh air and keep warm and at rest.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap.

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After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Let water be drunken in little sips (dilution effect). Call a physician immediately. Do NOT induce vomiting.

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

When in doubt or if symptoms are observed, get medical advice.

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

No information available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

alcohol resistant foam, Extinguishing powder, Carbon dioxide (CO₂).

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products: Carbon monoxide Carbon dioxide (CO₂). Do not inhale explosion and combustion gases.

5.3. Advice for firefighters

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

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Do not allow to enter into soil/subsoil.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Protective measures: see section 7 + 8.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Clean contaminated articles and floor according to the environmental legislation.

6.3. Methods and material for containment and cleaning up

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

Protective measures: see section 7 + 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Use personal protection equipment. Do not eat, drink or smoke when using this product. Provide fresh air. Handle and open container with care. Conditions to avoid: generation/formation of aerosols.

Advice on protection against fire and explosion

Avoid formation of flammable and explosive vapour concentrations in the air and exceeding the exposure limit values. Only use the material in places where open light, fire and other flammable sources can be kept away. Vapours of flammable solvents can accumulate in the gas phase of closed container, especially during heat treatment. Therefore keep away from fire and sources of ignition. Provide earthing of containers, equipment, pumps and ventilation facilities. Use non-sparking tools. Recommendation: Wear anti-static footwear and clothing

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Advice on general occupational hygiene

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

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Protect against: Frost. Keep away from heat. Protect from direct sunlight. Keep container tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

Observe technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
106-97-8	Butane	600	1450		TWA (8 h)	WEL
		750	1810		STEL (15 min)	WEL
60-29-7	Diethyl ether	100	310		TWA (8 h)	WEL
		200	620		STEL (15 min)	WEL
109-66-0	Pentane	600	1800		TWA (8 h)	WEL

Additional advice on limit values

- a no restriction
- b End of exposure or end of shift
- c at long-term exposure:
- d before next shift

Y: A risk of reproductive effects needs not to be feared if the occupational exposure limit value (AGW) and the biological limit value (BGW) is kept

Z: A risk of reproductive effects cannot to be excluded if the occupational exposure limit value (AGW) and the biological limit value (BGW) is kept

blood (B)

Urine (U)

8.2. Exposure controls

Appropriate engineering controls

See section 7. No additional measures necessary.

Individual protection measures, such as personal protective equipment

Eye/face protection

Eye glasses with side protection.

Hand protection

Wear suitable gloves. Recommended glove articles: EN ISO 374. Suitable material: NBR (Nitrile rubber).

Breakthrough time: > 120 min (Thickness of the glove material: 0.4 mm). Breakthrough times and swelling properties of the material must be taken into consideration. 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. Barrier creams can help protecting exposed skin areas. In no case should they be used after contact.

Skin protection

Protective clothing.

Respiratory protection

If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Suitable respiratory protection apparatus: Filtering Half-face mask (EN 149), e.g. FFA P / Full-/half-/quarter-face masks (EN 136/140) + Combination filtering device, e.g. A P.

Environmental exposure controls

Do not allow to enter into surface water or drains.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Aerosol
Colour:	clear
Odour:	characteristic
Melting point/freezing point:	not determined
Boiling point or initial boiling point and boiling range:	not applicable
Flammability	
Solid/liquid:	Extremely flammable aerosol.
Gas:	not applicable
Lower explosion limits:	1,4 vol. %
Upper explosion limits:	36,0 vol. %
Flash point:	< 0 °C
Auto-ignition temperature:	170 °C
Decomposition temperature:	not determined
pH-Value:	not determined
Viscosity / kinematic:	not determined
Water solubility:	Immiscible
Partition coefficient n-octanol/water:	not determined
Vapour pressure:	8300 hPa
(at 20 °C)	
Density (at 20 °C):	0,63 g/cm ³
Relative vapour density:	not determined
Particle characteristics:	not applicable

9.2. Other information

Explosive properties
May form explosive peroxides.

Other safety characteristics

Evaporation rate:	not applicable
Pour point:	not determined
Viscosity / dynamic:	not determined
Flow time:	not determined

Further Information

No further relevant information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No information available.

10.2. Chemical stability

No information available.

10.3. Possibility of hazardous reactions

No hazardous reaction when handled and stored according to provisions.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

No information available.

10.6. Hazardous decomposition products

No information available.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in GB CLP Regulation

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Acute toxicity

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

ATEmix calculated

ATE (oral) 1117,5 mg/kg

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
60-29-7	diethyl ether					
	oral	LD50 mg/kg	855	Rat		
	dermal	LD50 mg/kg	>20000	Rabbit		
109-66-0	pentane					
	inhalation (4 h) vapour	LC50	364 mg/l	Rat	GESTIS	

Irritation and corrosivity

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

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 drowsiness or dizziness. (diethyl ether; pentane)

STOT-repeated exposure

Repeated exposure may cause skin dryness or cracking.

Aspiration hazard

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

11.2. Information on other hazards

Other information

Keeping to the general worker's protection rules and the industrial hygienics, there is no risk in handling this product through the personnel. Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation).

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
109-66-0	pentane					
	Acute crustacea toxicity	EC50 mg/l	9,74	48 h Daphnia magna	IUCLID	

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
74-98-6	propane	2,36
109-66-0	pentane	3,39
106-97-8	butane	2,89
75-28-5	isobutane	2,8

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12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

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

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Do not allow to enter into surface water or drains. This material and its container must be disposed of in a safe way. Waste disposal according to EC directives 75/442/EEC and 91/689/EEC in the corresponding versions, covering waste and dangerous waste.

List of Wastes Code - residues/unused products

200113 MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS; separately collected fractions (except 15 01); Solvents; hazardous waste

List of Wastes Code - contaminated packaging

150104 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); metallic packaging

Contaminated packaging

Non-contaminated packages may be recycled. Consult the appropriate local waste disposal expert about waste disposal.

SECTION 14: Transport information

Land transport (ADR/RID)

<u>14.1. UN number or ID number:</u>	UN 1950
<u>14.2. UN proper shipping name:</u>	AEROSOLS
<u>14.3. Transport hazard class(es):</u>	2
<u>14.4. Packing group:</u>	-
Hazard label:	2.1



Classification code:	5F
Special Provisions:	190 327 344 625
Limited quantity:	1 L
Excepted quantity:	E0
Transport category:	2
Tunnel restriction code:	D

Marine transport (IMDG)

<u>14.1. UN number or ID number:</u>	UN 1950
<u>14.2. UN proper shipping name:</u>	AEROSOLS
<u>14.3. Transport hazard class(es):</u>	2.1
<u>14.4. Packing group:</u>	-
Hazard label:	2.1



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Marine pollutant:	NO
Special Provisions:	63, 190, 277, 327, 344, 959
Limited quantity:	1000 mL
Excepted quantity:	E0
EmS:	F-D, S-U

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1950
14.2. UN proper shipping name:	AEROSOLS, flammable
14.3. Transport hazard class(es):	2.1
14.4. Packing group:	-
Hazard label:	2.1



Special Provisions:	A145 A167 A802
Limited quantity Passenger:	30 kg G
Passenger LQ:	Y203
Excepted quantity:	E0
IATA-packing instructions - Passenger:	203
IATA-max. quantity - Passenger:	75 kg
IATA-packing instructions - Cargo:	203
IATA-max. quantity - Cargo:	150 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No data available

14.7. Maritime transport in bulk according to IMO instruments

No data available

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 28, Entry 40

2010/75/EU (VOC): 99,58 % (630,4 g/l)

National regulatory information

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

15.2. Chemical safety assessment

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

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,7,9,11,13,14,15.

Abbreviations and acronyms

ADR: Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement concernant le transport international ferroviaire des marchandises dangereuses (Regulations concerning the International Carriage of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
CAS: Chemical Abstracts Service (a division of the American Chemical Society)
DNEL/DMEL: Derived No-Effect Level / Derived Minimal Effect Level

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PNEC: Predicted No Effect Concentration
WEL (UK): Workplace Exposure Limits
TWA (EC): Time-Weighted Average
STEL (EC): Short Term Exposure Limit
ATE: Acute Toxicity Estimate
LD50: Lethal Dose, 50% (median lethal dose)
LC50: Lethal Concentration, 50% (median lethal concentration)
EC50: half maximal Effective Concentration
ErC50: EC50 in terms of reduction of growth rate
AwSV: Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen

Relevant H and EUH statements (number and full text)

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.
H302	Harmful if swallowed.
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.
EUH019	May form explosive peroxides.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

Safety Data Sheet according to COMMISSION REGULATION (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006

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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)