SECTION 1: SUBSTANCE/MIXTURE IDENTIFICATION AND MANUFACTURER/SUPPLIER IDENTIFICATION

1.1. Product identification
ADHESIVE IN SPRAY

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

Area of use:
SU3 Industrial manufacturing: Uses of substances as such or in preparations at industrial sites.
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen).
SU21 Consumer uses: Private households / general public / consumers.

Product category:
PC1 Adhesives and sealants.

Process category:
PROC7 Industrial spraying.
PROC11 Non industrial spraying.

Use of substance/mixture:
Adhesive.

1.3. Data of the safety data sheet supplier

Przedsiębiorstwo RANAL Sp. z o.o.
Ul. Łódzka 3
42-240 Rudniki k. Częstochowy, PL
Tel.: +48 34 329 45 03
Fax: +48 34 320 12 16
Registration number: 000029202

Person responsible for the safety data sheet:
ranal@ranal.pl

1.4. Emergency telephone
+48 34 329 45 03 (8.00 am to 03.00 pm)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Classification according to Regulation (EC) no 1272/2008.

GHS02 flame

Aerosol 1	H222-H229	Extremely flammable aerosol. Pressurized container: may burst if heated.

GHS09 environment

Aquatic Chronic 2	H411	Toxic to aquatic life with long-lasting effects.

GHS07

Skin Irrit. 2	H315	Causes skin irritation.
STOT SE 3	H336	May cause drowsiness or dizziness.
Asp. Tox. 1	H304	May be fatal if swallowed and enters airways.

2.2. Label elements
The product is classified and labelled according to CLP regulations.

Pictograms indicating hazard category:

GHS02 GHS07 GHS09

Warning word: **Danger.**

Components indicating hazard for labelling:
Pentane.
Hydrocarbons, C6, isoalkanes <5%, n-hexane.
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics.

Hazard statements:

H222-H229	Extremely flammable aerosol. Pressurized container: may burst if heated.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long-lasting effects.

Precautionary statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.
P260	Do not breathe spray.
P211	Do not spray on an open flame or other ignition source.
P280	Wear protective gloves / eye protection.
P273	Avoid release to the environment.
P271	Use only outdoors or in a well-ventilated area.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
P403	Store in a well ventilated place.
P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

2.3. Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances
Not applicable.

3.2. Mixtures

Description:
Mixture of biocatalysts with liquid propellant.

Substance name
Concentration [% weight]
Identification numbers
Classification and labelling

Dimethyl ether
10-<25%
CAS: 115-10-6
EINECS: 204-065-8
Reg. no.: 01-2119472128-37
Flam. Gas 1, H220; Press. Gas C, H280.

Pentane
10-<25%
CAS: 109-66-0
EINECS: 203-692-4
Reg. no.: 01-2119459286-30
Flam. Liq. 1, H224; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; STOT SE 3, H336.

Hydrocarbons, C6, isoalkanes <5%, n-hexane
10-<25%
EC number: 931-254-9
Reg.no.: 01-2119484651-34
Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; STOT SE 3, H336.

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics
10-<25%
EC number: 927-510-4
Reg. no.: 01-2119475515-33
Flam. Liq. 2, H225; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; STOT SE 3, H336.

Butane (1.3 Butadiene <0.1%)
2.5-<10%
CAS: 106-97-8
EINECS: 203-448-7
Reg. no.: 01-2119474691-32
Flam. Gas 1, H220; Press. Gas C, H280.

Butan-2-one
2.5-<10%
CAS: 78-93-3
EINECS: 201-159-0
Reg. no.: 01-2119457290-43
Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336.

Propane
2.5-<10%
CAS: 74-98-6
EINECS: 200-827-9
Reg. no.: 01-2119486944-21
Flam. Gas 1, H220; Press. Gas C, H280.

Full text of hazard statements provided in section 16 of the Material Safety Data Sheet.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information:
See section 11 of the Material Safety Data Sheet.

After inhalation:
In case of loss of consciousness place and transport in stable recovery position.

After contact with skin:
Immediately wash with water and soap and rinse thoroughly.

After contact with eyes:
Rinse the eyes with open eyelids under running water for several minutes.

After swallowing:
Do not induce vomiting and call a doctor.

4.2. Most important symptoms both acute and delayed
No further relevant data available.

4.3. Indications of any immediate medical attention and special treatment needed
No further relevant data available.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media
Suitable extinguishing media: Water mist. Extinguishing powder. Carbon dioxide. Foam resistant to alcohol.
Extinguishing media unsuitable due to safety considerations: Full jet of water.

5.2. Special hazards arising from the substance or mixture
No further relevant data available.

5.3. Advice for firefighters
Special protective equipment: Wear respiratory tract protection.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency measures
Wear protective clothes. Evacuate unprotected persons to a safe place.

6.2. Environmental precautions:
Prevent leakage into sewage system or water reservoirs.
In case of release into sewage system or water reservoirs inform appropriate authorities.
Prevent release into sewage system / surface water / ground water.

6.3. Methods and materials for containment and cleaning up
Ensure sufficient ventilation.
Do not rinse with water or water based cleaning agents.

6.4. Reference to other sections
Information on safe handling: see section 7.
Information on personal protective measures: see section 8.
Information on disposal: see section 13.

SECTION 7: HANDLING AND STORAGE OF SUBSTANCES AND MIXTURES

7.1 Precautions for safe handling
Ensure good ventilation/aspiration in a work place.
Open and handle carefully the containers.

Precautions against fire and explosion:
Do not spray towards flames or over glowing material.
Keep away ignition sources – do not smoke.
Take precaution measures against electrostatic discharges.
Warning: Pressurized container. Protect from sunlight and temperatures over 50°C.
Do not open violently or burn even after use.

7.2. Conditions for safe storage, including any incompatibilities

Storage:
Storage and requirements for storage facilities and tanks:
Store in a cool place.
Respect regulations concerning storage of pressurized gas containers.

Information on storage in common storage facilities:
Respect regulations concerning storage of pressurized gas containers.

Other recommendations for conditions of storage:
Keep the container tightly sealed.
Do not close the container gas-tight.
Store in well closed tanks in a cool and dry place. Protect from heat and direct sunlight.

7.3. Special end use(s)
No further relevant data available.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION MEASURES

8.1. Control parameters

Components with controlled limit values depending on the workplace:

115-10-6	dimethyl ether		MPC: 1000 mg/m^3
109-66-0	pentane		MPC: 3000 mg/m^3
106-97-8	butane (1.3 Butadiene <0.1%)	MPIC: 3000 mg/m^3	MPC: 1900 mg/m^3
78-93-3	butan-2-one	MPIC: 900 mg/m^3	MPC: 450 mg/m^3
74-98-6	propane		MPC: 1800 mg/m^3

DNEL values:

109-66-0 pentane		
Oral DNEL Long term-systemic	214 mg/kg bw/day	(Consumer)
Dermal DNEL Long term-systemic	214 mg/kg bw/day	(Consumer)
	432 mg/kg bw/day	(Worker)

Inhalation DNEL Long term-systemic	643 mg/m^3	(Consumer)
	3000 mg/m^3	(Worker)
Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics		
Oral DNEL Long term-systemic	149 mg/kg bw/day	(Consumer)
Dermal DNEL Long term-systemic	149 mg/kg bw/day	(Consumer)
	300 mg/kg bw/day	(Worker)
Inhalation DNEL Long term-systemic	477 mg/m^3	(Consumer)
	2085 mg/m^3	(Worker)
78-93-3 butan-2-one		
Oral DNEL Long term-systemic	31 mg/kg bw/day	(Consumer)
Dermal DNEL Long term-systemic	412 mg/kg bw/day	(Consumer)
	1161 mg/kg bw/day	(Worker)
Inhalation DNEL Long term-systemic	106 mg/m^3	(Consumer)
	600 mg/m^3	(Worker)

Additional information:
Current lists were used as basis.

8.2. Exposure control

Personal protective measures:

General means of protection and hygiene:
Keep away from food, drinks and feed.
Take off immediately contaminated, soaked clothes.
Wash hands before work breaks and at the end of a working day.
Do not breathe gas/ vapour / aerosol.
Avoid contact with skin.
Avoid contact with skin and eyes.

Respiratory protection:
In case of short-term or slight burden use filtrating apparatus, in case of intense or long – term exposure use self contained breathing apparatus.
In case of insufficient ventilation use respiratory protection.
Filter A/P2.

Hands protection:
Use protective gloves to work with chemicals according to standard EN 374.


Protective gloves.
Gloves resistant to solvents.
Choice of gloves material depends on breakthrough time and rate, penetration time and degradation.

Material of gloves:
The selection of suitable gloves depends not only on the material, but also on other quality characteristics and varies depending on the manufacturer. As the product is a multi-substance preparation, the resistance of the glove material cannot be estimated in advance and must be checked before use.
Nitrile rubber.
Recommended thickness of material: ≥0.5 mm

Penetration time of the material of gloves:
In case of continuous contact with the product we recommend the gloves with breakthrough time of at least 240 minutes, however breakthrough time longer than 480 minutes is preferred. In case of short time contact or protection against splashing we recommend the same breakthrough time. We are aware that suitable gloves offering this level of protection may not be available. In this case, a shorter breakthrough time is acceptable, while maintaining the maintenance procedures and temporarily replacing the gloves.
Thickness of gloves is not a good measure of their resistance to chemicals, because it depends on the composition of the material of which the gloves are made. The exact breakthrough time must be specified by the manufacturer and must be observed.

Eye protection:


Protective glasses (EN-166).
Tightly sealed glasses.

Body protection:
Wear protective clothes (EN-13034/6).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Change of state:	
Melting/freezing point:	Not specified.
Initial boiling point and boiling range:	-44,5°C
Flash point:	-97°C
Flammability (solid, gas):	Not applicable.
Ignition point:	>200°C
Autoignition point:	the product is not auto ignitable
Explosive properties:	the product is not explosive, but may form explosive mixtures with the air.
Explosion limits:	
Bottom:	0.6 Vol %
Top:	18.6 Vol %
Vapour pressure at 20°C:	5200 hPa
Density at 20°C:	0,71 g/cm3
Relative density	Not specified.
Vapour density	Not specified.
Evaporation rate	Not applicable.
Solubility in/ miscibility with:	
water:	Not miscible or difficult to mix.
n-octanol/water partition coefficient:	Not specified.
Viscosity:	
Dynamic:	Not specified.
Kinematic:	Not specified.
Solvent content:	
Organic solvents:	83.1%
Solids content:	16.9%
Solids content	1.1%

9.2. Other information
No further relevant data available.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
No further relevant data available.

10.2. Chemical stability

Thermal decomposition/ conditions to be avoided:
No decomposition if used as intended.

10.3. Possibility of hazardous reactions
Hazardous reactions unknown.

10.4. Conditions to be avoided
No further relevant data available.

10.5. Incompatible materials
No further relevant data available.

10.6. Hazardous decomposition products
Hazardous decomposition products unknown.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
No experimental data on the preparation.
The assessment was made on the basis of data concerning dangerous components of the preparation.

a) Acute toxicity
Based on available data, classification criteria are not met.

Relevant classified LD/LC50 values:

Hydrocarbons, C6, isoalkanes <5%, n-hexane

Oral	LD50	>5000 mg/kg	(rat)
Dermal	LD50	>3000 mg/kg	(rabbit)
Inhalation	LC50/4h	>10000 mg/l	(rat)

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

Oral	LD50	>5840 mg/kg	(rat)
Dermal	LD50	>2920 mg/kg	(rat)
Inhalation	LC50/4 h	23.3 mg/l	(rat)

78-93-3 butan-2-on

Oral	LD50	>2193 mg/kg	(rat)
Dermal	LD50	>5000 mg/kg	(rabbit)
		5000 mg/kg	(rbt)

b) Caustic/irritating effect on skin
Causes skin irritation.

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

d) Allergic effect on respiratory tract or skin
Based on available data, classification criteria are not met.

e) Mutagenic effect on germ cells
Based on available data, classification criteria are not met.

f) Carcinogenicity
Based on available data, classification criteria are not met.

g) Harmful effect on reproduction
Based on available data, classification criteria are not met.

h) Toxic effect on target organs – single exposure
May cause drowsiness or dizziness.

i) Toxic effect on target organs – repeated exposure
Based on available data, classification criteria are not met.

j) Aspiration hazard
May be fatal if swallowed and enters airways.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Aquatic toxicity:

109-66-0 pentane

NOEC / 72 h	7.51 mg/l	(*Pseudokirchneriella subcapitata*)
EC50 / 72 h	10.7 mg/l	(*Pseudokirchneriella subcapitata*)
LC50 / 96 h	4.26 mg/l	(*Oncorhynchus mykiss*)
EC50 / 48 h	2.7 mg/l	(Dm)

Hydrocarbons, C6, isoalkanes <5%, n-hexane

LC50	>2 mg/l	(Fish)

Hydrocarbons, C7, n-alkanes, isoalkanes, cyclics

EL50 / 72 h	10-30 mg/l	(*algae*)
LC50 / 96 h	>13.4 mg/l	(Fish)
EC50 / 48 h	3 mg/l	(Dm)

78-93-3 butan-2-one

LC50 / 96 h	2993 mg/l	(*Pimephales promelas*)
EC50 / 48 h	308 mg/l	(Dm)

12.2. Persistence and degradability
No further relevant data available.

12.3. Bioaccumulative potential
No further relevant data available.

12.4. Mobility in soil
No further relevant data available.

Ecotoxic effects:
Warning: Poisonous for fish.

Further ecological information:
General information:
Water hazard class 2 (Self assessment): harmful to aquatic life
Prevent leakage into ground water, surface water or sewage system.
Harmful to potable water even if only small quantities get through the soil.
Poisonous for fish and plankton in water reservoirs.
Poisonous to aquatic life.
Harmful to aquatic life.

12.5. Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.

12.6. Other harmful effects
No further relevant data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recommendation:
Cannot be disposed of together with communal waste. Prevent leaking into sewage system.

Uncleaned container:
Recommendation: Dispose of according to current regulations.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number

ADR, ADN, IMDG, IATA	UN1950

14.2. UN proper shipping name

ADR, ADN	UN1950 AEROSOLS, ENVIRONMENTALLY HAZARDOUS
IMDG	AEROSOLS (Naphtha (petroleum), hydrotreated light "(Note P; -R45, R46; <0.1% benzene)", PENTANES), MARINE POLLUTANT
IATA	AEROSOLS, flammable

14.3. Transport hazard class(es)

ADR

Class	2 5F gases
Label	2.1

ADN

ADN/R Class:	2 5F

IMDG

Class	2.1
Label	2.1

IATA

Class	2.1
Label	2.1

14.4. Packaging group

ADR, IMDG, IATA	void

14.5. Environmental hazards

The product contains components hazardous to the environment:
Naphtha (petroleum), hydrotreated light
(Note P; <0,1% benzene)

Marine pollutant: Yes
Symbol (fish and tree)

Special labelling (ADR):
Symbol (fish and tree)

14.6. Special precautions for user

Warning: gases	
Kemler's code:	-
EMS number:	F-D,S-U
Stowage Code	SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.
Segregation Code	SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 Convention and the IBC Code
Not applicable.

Transport / Additional information:

ADR

Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
Tunnel restriction code	D

IMDG

Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
UN "Model Regulation":	UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS

SECTION 15: REGULATORY INFORMATION

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

Directive 2012/18/EU.

Listed dangerous substances - ANNEX I	None of the components is listed.
Seveso Categories	P3a AEROSOLS FLAMMABLE E2 Hazardous for aquatic environment

Qualifying amount (tons) to apply lower tier requirements 150 t
Qualifying amount (tons) to apply upper tier requirements 500 t

Regulation (EC) no 1907/2006 ANNEX XVII	restriction conditions: 3

National regulations:

Class share %	NK 75-<100
VOC-CH	83.13 %
VOC-EU	587.7 g/l
Danish MAL Code	5-3

15.2. Chemical safety assessment

Chemical safety assessment has not been performed.

SECTION 16: OTHER INFORMATION

This information is based on our latest knowledge. However, it does not constitute guarantee of any specific product features and cannot be the basis for valid contracts.

Full text of hazard statements mentioned in sections 2-15 of the Sheet:

H220	Extremely flammable gas.
H224	Extremely flammable liquid and vapours.
H225	Highly flammable liquid and vapours.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long-lasting effects.

Classification according to Regulation (EC) no 1272/2008
According to Directive no 1272/2008 (UE) the classification of the mixture is based on the calculation method using material data.

Explanation of abbreviations and acronyms used in the Material Safety Data Sheet:

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 Harmonised 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 (division of the American Chemical Society).
MAL-Code	Måleteknisk Arbejdshygiejnisk Luftbehov (Regulation for the labelling concerning inhalation hazards, Denmark).
DNEL	Derived No-Effect Level (REACH).
LC50	Lethal concentration, 50 percent.
LD50	Lethal dose, 50 percent.
PBT	Persistent, Bioaccumulative and Toxic.
vPvB	very Persistent and very Bioaccumulative.
Flam. Gas 1	Flammable gases – Category 1.
Aerosol 1	Aerosols – Category 1.
Press. Gas C	Pressurized gases – Compressed gas.
Flam. Liq. 1	Flammable liquids – Category 1.
Flam. Liq. 2	Flammable liquids – Category 2.
Skin Irrit. 2	Caustic/irritating effect on skin – Category 2.
Eye Irrit. 2	Serious eye damage/eye irritation – Category 2.
STOT SE 3	Toxic effect on target organs (single exposure) – Category 3.
Asp. Tox. 1	Aspiration hazard – Category 1.
Aquatic Chronic 2	Harmful for aquatic life – chronic hazard for aquatic life – Category 2.

Number of the Sheet: 061N6L2019V1